



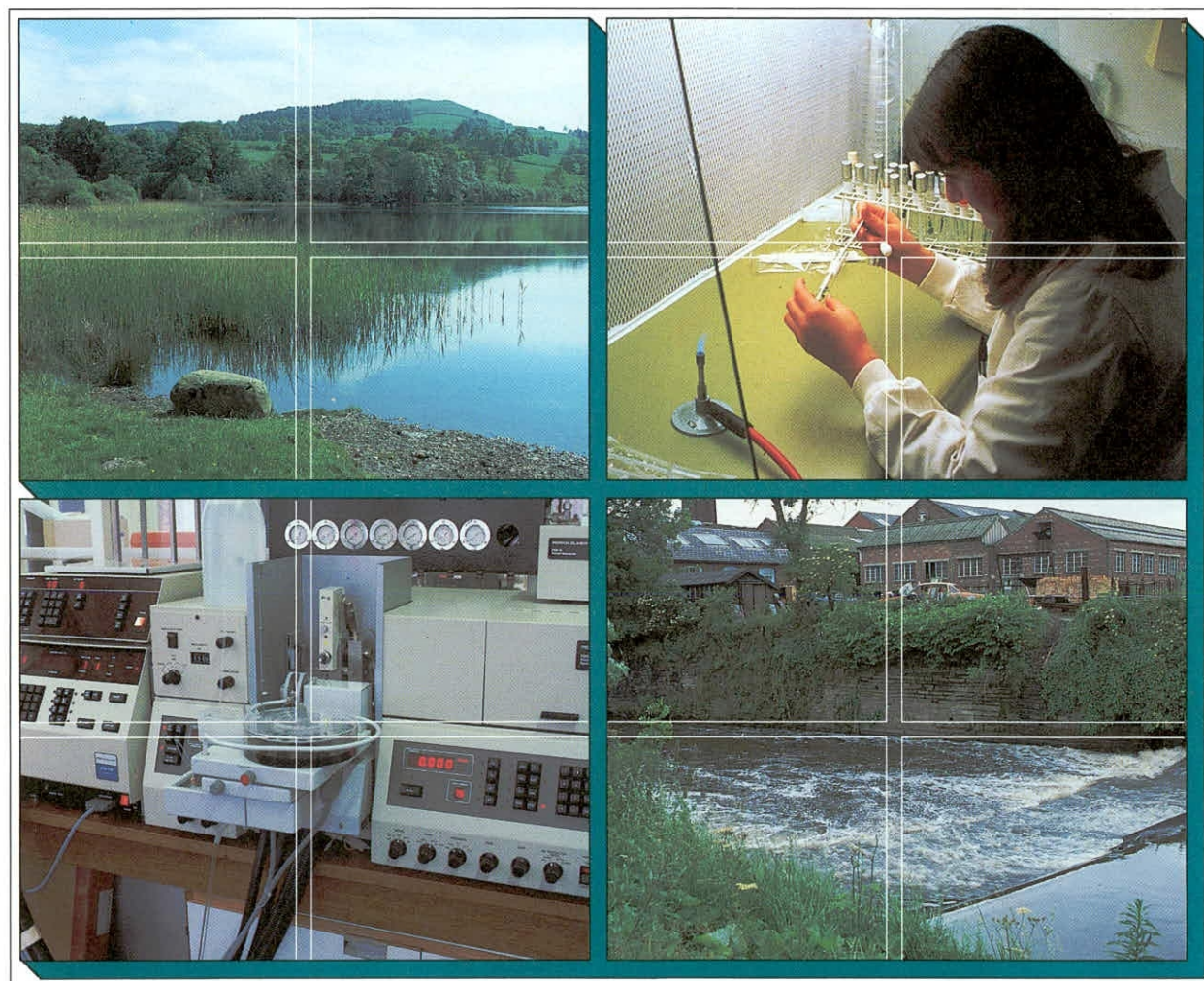
River Habitat Survey 1994

RHS Data Sheets (IFE)

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Report To:
IFE Report Ref. No:

National Rivers Authority
RL/T04073f1/2





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August 1994

National Rivers Authority

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Copies of the River Habitat Survey forms completed by staff of the IFE under commission to the NRA to survey 390 water courses and completed between 3 May and 30 June 1994.

Original forms have been reduced in size to allow 1 set of 4 page forms per page.

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NO.	REGION	River	Hyd No.	Catchmnt	100kmEN	1kmEN
191	NY	Sawden Beck	27	Derwent	44	947847
192	NY	T. of Derwent	27	Derwent	54	43852
209	NY	Gypsey Race	26	Gypsey Race	44	974708
210	NY	Gypsey Race	26	Gypsey Race	54	55726
211	NY	Long Whins Gill	27	Longwhins Gill	54	113773
227	NY	Gypsey Race	26	Gypsey Race	44	928690
228	NY	Kelk Beck	26	Hull	54	83615
229	NY	Gypsey Rae	26	Gypsey Rae	54	155679
236	NY	Barden Beck	27	Wharfe	44	44564
237	NY	Washburn	27	Wharfe	44	166557
238	NY	Cockhill Beck	27	Nidd	44	248561
239	NY	Nidd	27	Nidd	44	356556
240	NY	Nidd	27	Nidd	44	456544
241	NY	Ouse	27	Ouse	44	554554
242	NY	Old Foss Beck	27	Ouse	44	647555
243	NY	Common Beck	27	Derwent	44	727534
244	NY	Millington Beck	27	Derwent	44	841528
245	NY	Southburn Beck	26	Hull	44	984546
246	NY	Hull	26	Hull	54	65558
247	NY	Stream Dyke	26	Barmston Main Drain	54	163551
255	NY	Aire	27	Aire	44	45446
256	NY	T. of Wharfe	27	Wharfe	44	154467
257	NY	Wharfe	27	Wharfe	44	255456
258	NY	Wharfe	27	Wharfe	44	354457
259	NY	Wharfe	27	Wharfe	44	455457
260	NY	The Fleet	27	Wharfe	44	564443
261	NY	Halfpenny Dike	27	Ouse	44	665446
262	NY	The Beck	27	Derwent	44	745449
263	NY	Bielby Beck	27	Derwent	44	841467
264	NY	Bryan Mills Beck	26	Hull	44	995473
265	NY	Hull	26	Hull	54	56445
266	NY	Stream Dike	26	Unknown	54	145446
274	NY	Manywells Beck	27	Aire	44	57351
275	NY	Bradford Beck	27	Aire	44	145332
276	NY	Wortley Beck/Farnley	27	Aire	44	244336
278	NY	Mill Dyke	27	Aire	44	449333
279	NY	Bishop Dike	27	Ouse	44	554353
280	NY	Folly Drain	27	Derwent	44	645346
281	NY	Fleet Dyke	27	Ouse	44	735339
283	NY	Mires Beck/Mill	26	Ouse	44	905357
284	NY	Beverley&Barmston Dr	26	Hull	54	71353
285	NY	Wyton Drain	26	Wyton Drain	54	174326
286	NY	Sproatley Drain	26	Wyton	54	215344
293	NY	Luddendon Brook	27	Calder	44	42257
294	NY	Clifton Beck	27	Calder	44	148247
295	NY	Lady Ann Beck	27	Calder	44	252248
296	NY	Calder	27	Calder	44	355244
297	NY	Aire	27	Aire	44	455273
298	NY	Aire	27	Aire	44	555258
299	NY	Aire	27	Aire	44	655274
300	NY	Ouse	27	Ouse	44	715268
302	NY	Mires Beck, T of Mill	27	Ouse	44	939275
303	NY	Beverley&Barmston Dr	26	Humber	54	98298
305	NY	Keyingham Drain	26	Keyingham Drain	54	234258
306	NY	Winestead Drain	26	Winestead Drain	54	333267
314	NY	Black Brook	27	Calder	44	41154
315	NY	Holme	27	Calder	44	147158
316	NY	Bentley Brook	27	Don	44	254145
317	NY	Owler Beck	27	Calder	44	331161
318	NY	Hoyle Mill Stream	27	Don	44	444158
319	NY	Went	27	Don	44	544159
320	NY	Clay Dike	27	Don	44	665157
334	NY	Ribble	27	Aire	44	141065
335	NY	Scout Brook Dyke	27	Don	44	245041
336	NY	Dodworth Dike	27	Don	44	333038
337	NY	Houghton Beck	27	Don	44	443058
338	NY	Don	27	Don	44	561030
356	NY	Hobson Moss Dike	27	Don	43	242939
357	NY	Blackburn Brook	27	Don	43	358958
358	NY	Don	27	Don	43	452944
382	NY	Rivelin	27	Don	43	256876
383	NY	Sheaf	27	Don	43	346847
384	NY	Rother	27	Don	43	441844
414	NY	Whitting/Barlow Brk.	27	Don	43	358754

NO.	REGION	River	Hyd No.	Catchmnt	100kmEN	1kmEN
415	NY	Doe Lea	27	Don	43	445755
447	NY	Holmewood Brook	27	Don	43	453657
474	ST	Horrtton Brook	28	Trent	33	940558
505	ST	Lyme Brook	28	Trent	33	852452
506	ST	Causeley Brook	28	Trent	33	925472
534	ST	Perry	54	Severn	33	332332
535	ST	Roden	54	Severn	33	468309
536	ST	Soulton Brook	54	Severn	33	553343
537	NW	Duckow	68	Weaver	33	648352
538	ST	Loggerheads Brook	54	Severn	33	727353
539	ST	Meece Brook	28	Trent	33	832332
540	ST	Scotch Brook	28	Trent	33	916357
564	ST	Eiddeu	54	Severn	23	956244
565	ST	Tannat	54	Severn	33	66259
566	ST	Tannat	54	Severn	33	145243
567	ST	Tannat	54	Severn	33	233234
568	ST	Morda	54	Severn	33	304254
569	ST	Perry	54	Severn	33	416211
570	ST	Rodden	54	Severn	33	555255
572	ST	Lonco Brook	54	Severn	33	754245
573	ST	Sow	28	Trent	33	8826
574	ST	Sow	28	Trent	33	952226
603	ST	Twrch	54	Severn	23	967157
604	ST	Vyrnwy	54	Severn	33	43144
605	ST	Vyrnwy	54	Severn	33	162132
606	ST	New Cut	54	Severn	33	255145
607	ST	Severn	54	Severn	33	344157
608	ST	Severn	54	Severn	33	437164
609	ST	Severn	54	Severn	33	523141
610	ST	Red Strine Brook	54	Severn	33	651151
611	ST	Strine	54	Severn	33	713156
612	ST	Church Eaton Brook	28	Trent	33	866158
613	ST	Penk	28	Trent	33	933151
642	ST	Gam	54	Severn	23	962058
643	ST	Rhiw	54	Severn	33	54036
644	ST	Rhiw	54	Severn	33	145028
645	ST	Severn	54	Severn	33	233056
646	ST	Minsterley Brook	54	Severn	33	369040
647	ST	T. of Cound Brook	54	Severn	33	455045
648	ST	Cound Brook	54	Severn	33	556054
649	ST	Severn	54	Severn	33	654043
650	ST	Wesley Brook	54	Severn	33	743054
651	ST	Penk	28	Trent	33	894096
652	ST	T. of Penk	28	Trent	33	956064
660	An	Gaddesby Brook	28	Trent	43	718090
661	An	Chater	31	Welland	43	852038
662	An	Chater	31	Welland	43	955031
681	ST	Garno	54	Severn	22	974961
682	ST	Severn	54	Severn	32	54929
683	ST	Severn	54	Severn	32	155945
684	ST	Camlad	54	Severn	32	275946
685	ST	West Onny	54	Severn	32	358901
699	An	Welland	31	Welland	42	767925
700	An	Welland	31	Welland	42	865925
701	An	Willow Brook	32	Nene	42	963947
702	An	Willow Brook	32	Nene	52	44942
720	ST	Clywedog	54	Severn	22	945854
721	ST	Severn	54	Severn	32	14867
722	ST	The Mole	54	Severn	32	121878
723	ST	Clun	54	Severn	32	254821
724	ST	Kemp	54	Severn	32	355851
725	ST	Byne Brook	54	Severn	32	443855
737	An	Welland	31	Welland	42	667852
738	An	Welland	31	Welland	42	755876
739	An	Ise	32	Nene	42	868830
740	An	Harpers Brook	32	Nene	42	951841
747	An	Little Ouse	33	Ouse	52	657865
762	ST	Teme	54	Severn	32	251751
763	ST	Redlake	54	Severn	32	342751
777	An	T. of Brampton Nene	32	Nene	42	752756
778	An	Ise	32	Nene	42	885753
779	An	Nene	32	Nene	42	966745
781	An	Ellington Brook	33	Ouse	52	144725
783	An	Great ouse	33	Ouse	52	369733

NO.	REGION	River	Hyd No.	Catchmnt	100kmEN	1kmEN
784	An	Old West	33	Ouse	52	446728
787	An	Lark	33	Ouse	52	747735
795	W	Arth	63	Arth	22	523628
796	W	Camddwr	62	Teifi	22	667658
816	An	Whilton Nene	32	Nene	42	620643
817	An	Brampton Nene	32	Nene	42	735646
818	An	Nene	32	Nene	42	875635
819	An	Nene	32	Nene	42	936684
820	An	Kym/Til	33	Ouse	52	34687
821	An	Kym	33	Ouse	52	146644
822	An	Great Ouse	33	Ouse	52	213656
823	An	Cottenham Lode	33	Ouse	52	380616
824	An	Cottenham Lode	33	Ouse	52	419056
825	An	Swaffham Bulbeck Lod	33	Ouse	52	547646
827	An	Cavenham Stream	33	Ouse	52	776655
828	An	Lark	33	Ouse	52	853655
830	An	Gipping	35	Orwell	62	73620
835	W	Unknown	63	Ffynnon Ddewi	22	350553
836	W	Mydyr	63	Aeron	22	478585
837	W	Aeron	63	Aeron	22	555562
838	W	Teifi	62	Teifi	22	640555
839	W	Camddwr	60	Tywi	22	775554
858	An	Whilton Dene	32	Nene	42	660590
859	An	Nene	32	Nene	42	764599
861	An	Great Ouse	33	Ouse	42	943557
862	An	Great Ouse	33	Ouse	52	17554
863	An	Great Ouse	33	Ouse	52	152535
864	An	T. of Ivel	33	Ouse	52	245523
865	An	Bourn Brook	33	Ouse	52	361555
866	An	Cam	33	Ouse	52	435557
867	An	Babraham	33	Ouse	52	503511
868	An	Stour	36	Stour	52	674535
869	An	Glem	36	Stour	52	776525
870	An	Glem	36	Stour	52	824513
871	An	Rattlesden	36	Stour	52	994594
872	An	Gipping	35	Orwell	62	75567
877	W	Unknown	61	Unknown	22	133435
878	W	Teifi	62	Teifi	22	243424
879	W	Ceri	62	Teifi	22	321455
880	W	Clettwr	62	Teifi	22	445446
881	W	Teifi	62	Teifi	22	556463
882	W	Twrch	60	Tywi	22	648445
883	W	Gwenffrwd	60	Tywi	22	756457
902	An	Tove	33	Ouse	42	655474
903	An	Tove	33	Ouse	42	777456
904	An	Great Ouse	33	Ouse	42	853451
905	An	T. of Elstow Brook	33	Ouse	42	994408
906	An	Elstow Brook	33	Ouse	52	32458
907	An	Ivel	33	Ouse	52	186446
908	An	Rhee/Cam	33	Ouse	52	265445
909	An	Whaddon Brook	33	Ouse	52	353455
910	An	Cam	33	Ouse	52	487457
911	An	Babraham/Granta	33	Ouse	52	561467
912	An	Stour Brook	36	Stour	52	664463
913	An	Stour	36	Stour	52	753443
914	An	Stour	36	Stour	52	856450
915	An	Box	36	Stour	52	930430
916	An	Brett	36	Stour	62	24433
917	An	Orwell	35	Orwell	62	149449
918	An	Mill	35	Deben	62	243432
919	An	Shottisham	35	Deben	62	315455
920	W	Gwaun	61	Gwaun	22	966368
921	W	Gwaun	61	Gwaun	22	56347
922	W	Nyfer	61	Nyfer	22	144367
923	W	Cych	62	Teifi	22	274365
924	W	Nant Bargod	62	Teifi	22	354388
925	W	Tyveli	62	Teifi	22	442359
926	W	Clydach	60	Tywi	22	534335
927	W	Cothi	60	Tywi	22	643354
928	W	Tywi	60	Tywi	22	761347
937	ST	T. of Preston Brook	54	Severn	32	652352
947	An	Great Ouse	33	Ouse	42	647347
948	An	Great Ouse	33	Ouse	42	744359
949	An	Ouzel	33	Ouse	42	887345

NO.	REGION	River	Hyd No.	Catchmnt	100kmEN	1kmEN
950	An	Broughton Brook	33	Ouse	42	942367
951	An	Flit	33	Ouse	52	46348
952	An	Hiz	33	Ouse	52	186352
953	An	Ivel	33	Ouse	52	240348
955	Th	Ash	38	Lee	52	433311
956	An	Cam	33	Ouse	52	520350
957	An	Pant	37	Blackwater	52	646351
958	An	Colne	37	Colne	52	776356
959	An	Stour	36	Stour	52	880384
960	An	Stour	36	Stour	52	946335
961	An	Stour	36	Stour	62	41343
962	An	T. of Stour	36	Stour	62	133348
963	An	Ramsey Brook	36	Stour	62	235313
964	W	Alun	61	Alun	12	748253
965	W	Brandy Brook	61	Brandy Brook	12	853223
966	W	Western Cleddau	61	Western Cleddau	12	957252
967	W	Syfywny	61	Eastern Cleddau	22	39253
968	W	T. of Taff	60	Taff	22	153243
969	W	Cynin	60	Taff	22	276254
970	W	Duad	60	Tywi	22	379269
971	W	Gwili	60	Tywi	22	419244
972	W	Cothi	60	Tywi	22	531253
972	W	Cothi	60	Tywi	22	531253
973	W	Twyi	60	Twyi	22	651239
- 1002	Th	Pincey Brook	38	Lee	52	554221
1003	An	Chelmer	37	Chelmer	52	625235
1004	An	Pant	37	Blackwater	52	753255
1005	An	Blackwater	37	Blackwater	52	848223
1006	An	Colne	37	Colne	52	962261
1007	An	T. of Colne	37	Colne	62	32256
1008	An	Ramsey Brook	36	Ramsey Brook	62	165185
1009	W	Unknown	61	Unknown	12	866149
1010	W	Merlins Brook	61	Western Cleddau	12	955146
1011	W	Eastern Cleddau	61	Eastern Cleddau	22	65151
1012	W	Cwm Waungron	61	Taff	22	185147
1013	W	Taff	61	Taff	22	251151
1014	W	Cywyn	61	Taff	22	321173
1015	W	Gwendraeth Fach	61	Gwendraeth	22	456137
1016	W	Gwendraeth Fawr	61	Gwendraeth	22	525124
1017	W	Amman	59	Loughor	22	656132
1045	Th	Stort	38	Lee	52	465126
1046	Th	Pincey Brook	38	Lee	52	535147
1047	An	Chelmer	37	Chelmer	52	676176
1048	An	Ter	37	Chelmer	52	747154
1049	An	Blackwater	37	Blackwater	52	840154
1050	An	T. of Salcott Creek	37	Unknown	52	945148
1051	An	Unknown	37	Unknown	62	81198
1052	An	St Osyth Channel	37	St Osyth Channel	62	132157
1053	W	Unknown	61	Unknown	12	837087
1054	W	Unknown	61	Unknown	12	954056
1055	W	Unknown	61	Unknown	22	48053
1056	W	Riter	61	Riter	22	117005
1057	W	Gwendraeth Fawr	60	Gwendraeth Fawr	22	444067
1058	W	Morlais	59	Loughor	22	548047
1059	W	Lower Clydach	59	Tawe	22	677034
1060	W	Tawe	59	Tawe	22	743057
-1085	Th	Mimmshall Brook	39	Colne	52	230040
1086	Th	Small Lee	38	Lee	52	373043
1087	Th	Gypsey Brook	37	Roding	52	486052
1088	Th	Cripsey Brook	37	Roding	52	548051
1089	An	T. of Roxwell Brook	37	Chelmer	52	654066
1090	An	Sandon Brook	37	Chelmer	52	751050
1091	An	Mundon Wash	37	Mundon Wash	52	865033
1092	An	Higham Brook	37	Higham Brook	52	914091
1093	W	Unknown	61	Unknown	11	953969
1094	W	Llan	59	Loughor	21	595967
1095	W	Llan	59	Loughor	21	621969
1120	Th	T. of Colne	39	Colne	51	150954
1121	Th	Brent	39	Brent	51	248952
1122	Th	Salmons Brook	38	Lee	51	336942
1123	Th	Rodding	37	Rodding	51	447957
1124	Th	T. of Ingrebourne	37	Ingrebourne	51	551946
1125	An	Thorndon Brook	37	Chelmer	51	652945
1126	An	Crouch	37	Crouch	51	756943

NO.	REGION	River	Hyd No.	Catchmnt	100kmEN	1kmEN
1127	An	Rayleigh Brook	37	Roach	51	836902
1128	An	Pannel's Brook	37	Pannel's Brook	51	971957
1152	Th	Brent	39	Brent	51	158826
1153	Th	Brent	39	Brent	51	224874
1154	Th	Lee (Nav)	38	Lee	51	365857
1155	Th	Roding	37	Roding	51	443849
1156	Th	Ingrebourne	37	Ingrebourne	51	544856
1157	An	T. of Mar Dyke	37	Mar Dyke	51	627856
1158	An	T. of Vange Creek	37	Vange Creek	51	732854
1159	An	Prittle Brook	37	Roach	51	882868
1180	Th	Crane	39	Thames	51	153747
1181	Th	Wandle	39	Thames	51	256734
1182	Th	Pool	39	Thames	51	372732
1183	Th	Shuttle	40	Darent	51	464735
1184	Th	Darent	40	Darent	51	544742
1187	SW	Banwell	52	Banwell	31	363649
1205	Th	Mole/Ember	39	Thames	51	143667
1206	Th	Pyl Brook	39	Thames	51	244659
1207	Th	Pool	39	Thames	51	364695
1208	Th	Cray	40	Thames	51	472680
1209	Th	Darent	40	Thames	51	541657
1227	SW	Bourne	43	Avon	31	243547
1252	SW	Hawkcombe Stream	51	Hawkcombe Stream	21	853455
1253	SW	Wootton Courtenay St	51	Avill	21	943432
1258	SW	Sheppey	52	Brue	31	642432
1259	SW	Somerset Frome	53	Bristol Avon	31	775456
1260	SW	Rodden Brook	53	Bristol Avon	31	834465
1261	SW	T of Wylfe	43	Avon	41	931439
1262	SW	Till	43	Avon	31	62447
1263	SW	Avon	43	Avon	41	155451
1290	SW	Barle	45	Exe	21	851351
1291	SW	Washford	51	Washford	21	976376
1292	SW	T of Monksilver Strm	51	Doniford Stream	31	53354
1293	SW	T of Doniford Stream	51	Doniford Stream	31	151355
1294	SW	Durleigh Brook	52	Parrett	31	256302
1296	SW	Cary	52	Parrett	31	430330
1297	SW	Brue	52	Brue	31	543338
1298	SW	Alkham	52	Brue	31	636357
1299	SW	Brue	52	Brue	31	754365
1300	SW	Wylfe	43	Hampshire Avon	31	847371
1301	SW	Fonthill Stream	43	Hamshire Avon	31	939307
1302	SW	Wylfe	43	Avon	41	51370
1303	SW	Avon	43	Avon	41	128352
1329	SW	Yeo	50	Taw	21	841264
1330	SW	Exe	45	Exe	21	952248
1331	SW	Tone	52	Parrett	31	53251
1332	SW	Hillfarrance Brook	52	Parrett	31	149249
1333	SW	Broughton Brook	52	Parrett	31	254244
1334	SW	Sedgmoor O Rhyne	52	Parrett	31	338254
1335	SW	Yeo	52	Parrett	31	448251
1336	SW	Cary	52	Parrett	31	539260
1337	SW	T. of Cam	52	Parrett	31	650263
1338	SW	Cale	43	Stour	31	734248
1339	SW	Lodden	43	Stour	31	814256
1340	SW	Nadder	43	Hampshire Avon	31	922266
1341	SW	Ebbles	43	Avon	41	51254
1342	SW	Ebbles	43	Avon	41	150262
1368	SW	Dalch	50	Taw	21	851145
1369	SW	Exe	45	Exe	21	947149
1370	SW	Spratford Stream	45	Exe	31	53150
1371	SW	Culm	45	Exe	31	157140
1372	SW	Yarty	45	Axe	31	236145
1373	SW	Isle	52	Parrett	31	345152
1374	SW	Lopen Brook	52	Parrett	31	449145
1375	SW	Yeo	52	Parrett	31	565156
1376	SW	Yeo	52	Parrett	31	634156
1377	SW	Lydden	43	Stour	31	752150
1378	SW	Fontmell Brook	43	Stour	31	846153
1410	SW	Axe	45	Axe	31	349049
1411	SW	Whetley Stream	45	Axe	31	447048
1412	SW	Rampisham Stream	44	Frome	31	554033
1413	SW	Caudle Brook	43	Stour	31	677074
1414	SW	T of Lydden	43	Stour	31	743074
1415	SW	North Winterbourne	43	Stour	31	836042

NO.	REGION	River	Hyd No.	Catchmnt	100kmEN	1kmEN
1446	SW	Char	44	Char	30	379941
1447	SW	Brit	44	Brit	30	469943
1448	SW	Hooke	44	Frome	30	575975
1449	SW	Sydling Water	44	Frome	30	636951
1450	SW	Piddle	44	Piddle	30	751948
1451	SW	Bere Stream	44	Piddle	30	849942
1470	SW	Bride	44	Bride	30	545896
1471	SW	Pucksey Brook	44	Wey	30	652843
1472	SW	Tadnoll Brook	44	Frome	30	756873
1473	SW	Frome	44	Frome	30	845872

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 171 River SANDEW Mid-section grid reference if different from designated site: _____
 Grid Reference: S5949547 G2C
 Date: 17/5/1994 Start time: 10:00 Surveyor name: IAN SUMNER / B. L. HARRISON
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box) 63
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 63
 Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☒ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☐ symmetrical
☐ asymmetrical
☐ gorgo

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg. mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☒ static ☐
☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SPOT CHECKS (25 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check h

	1	2	3	4	5	6	7	8	9	...
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
- bank feature(s)	NO	NO	SC	NO	NO	NO	NO	NO	NO	
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SP	GP	ST	GP	SP	
Predominant flow type (one entry only)	AL	AL	AL	AL	RF	RF	RF	RF	RF	
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = sloops C = complex Refer to spot-check log

	B	U	S	C	NO	NO	NO	NO	NO
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	NO	NO	NO	NO	NO
LEFT BANK	C	C	C	C	NO	NO	NO	NO	NO
RIGHT BANK	C	C	C	C	NO	NO	NO	NO	NO
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (tick all that apply. Enter none with one entry only. Use B (1-3) or NO (1-3) if present)

	B	U	S	C	NO	NO	NO	NO	NO
NONE (tick as appropriate)									
Emergent herbs									
Emergent reeds/sedges									
Flowering-leaved									
Free-floating									
Amphibious									
Submerged									
Filamentous algae									

Use red column for overall assessment over 100m line E or

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 171

LAND USE WITHIN 50m OF RIVER (Use B (1-3) or NO (1-3) for each category)

	B	U	S	C	NO	NO	NO	NO	NO
Broadleaf/deciduous wooded									
Coniferous plantation									
Moorland/heath									
Scrub/rough pasture									
Suburban/urban development									

LEFT BANK None ☐ Banklength % = 50 **RIGHT BANK** None ☐ Banklength % = 50

BANK PROFILES WITHIN 50m (Use B (1-3) or NO (1-3) for each category)

	B	U	S	C	NO	NO	NO	NO	NO
Natural/unmodified									
Vertical/undercut									
Vertical + toe									
Steep (>45°)									
Gentle									
Composite									
Artificial/modified									
Revetment									
Reinforced - whole bank									
Reinforced - top only									
Reinforced - toe only									
Artificial two-stage									
Poached									

LEFT BANK None ☒ Banklength % = 50 **RIGHT BANK** None ☐ Banklength % = 50

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	% > 1%	None	Present B
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Present B
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of riffles = 21 Pools = 1 Unvegetated Point Bars = 1 Vegetated Point Bars = 1

	None	Present B
Waterfall/cascade		
Torrential flow (rapids)		
Laminar flow (run/glide)		
Static flow (stuck)		
Exposed bedrock		
Exposed boulders		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	CHANNEL	RIGHT BANK
Bank full height (m)	0.35	1.20
Bank height if different (m)		
Water width (m)	0.60	
Embanked height (m)		
Water depth (m)	0.05	
Embanked height (m)		

Red material at site: consolidated ☐ chest algal growth compact, stable
 unconsolidated ☐ chest: fresh stream gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total ticks, none where appropriate)

None ☐ Number of Culverts = 1 Weirs = 2 Bridges = 1

EVIDENCE OF RECENT MANAGEMENT (Other than sign tick boxes)

	B	U	S	C	NO	NO	NO	NO	NO
BANKS									
None									
Revetment									
Bank-sloping									
Enhancement									
CHANNEL									
None									
Dredging									
Wood-cutting									
Enhancement works									

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present in culture or abundance)

Great Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Describe 1 spot check representative of site as a whole)

Small riparian native bedrock 0.5-1.5m channel with steeply banked sides. No obvious signs of recent management. Bottom 200m submerged.

SPECIAL FEATURES (tick box(es) if present in culture or abundance)

Flow to above water level. No obvious signs of recent management.

RIVER TYPING (Refer to guidelines of other types and indicate which resembles the river)

Number (1-14) 12 None of them 12 for both 20-1

TIME TAKEN 30 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND SIGNED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD PARKLOUGH HOUSE, WARRINGTON, WA1 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-410; ANDREW BROOKES 7-25-5711

X. Water chews hole swimming in channel.

29 April 1994, 10:22 RIVER HABITAT SURVEY: 1994 VERIFICATION 1994 Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 c

TEN SPOT CHECKS (ca 50m apart)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

B FIELD SURVEY DETAILS Complete all questions

Site number: 209 River: S4581 Mid-section grid reference if different from designated site: R4C8

Date: 27.5.1994 Start time: 19.35 Surveyor name: J.A.N. Smith / B. H. (11.11.1972) (2.5.8)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) ⑤

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only) NOT APPROPRIATE - DR4

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GP	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	WJ	WJ	WJ	WJ	WJ	WJ	WJ	WJ	WJ	WJ
Predominant flow type (one entry only)	WJ	WJ	WJ	WJ	WJ	WJ	WJ	WJ	WJ	WJ
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GP	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
H VEGETATION STRUCTURE (to be assessed over a 10m wide swathe) Fill in each box with one entry only										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	NO	C	S	U	NO	NO	NO	NO	NO	NO
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry, use 6 (ca 33% cover) or 7 (present))										
NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Edaphic/algae										

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SWEEP-UP OVER 500m ENTER SITE NUMBER 209

J LAND USE WITHIN 50m OF RIVER Use 6 (ca 33% banklength) or 7 (if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 20 Right bank: None ☐ Banklength % = 10

L BANK PROFILES WITHIN 500m Use 6 (ca 33% banklength) or 7 (if present)

	L	R		L	R
Natural/unmodified			Artificial/modification		
Vertical undercut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		None	Present
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O NATURAL CHANNEL FEATURES Record extent number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4

P CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Bank height if different (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☐ cluses: algal growth compact, stable
unconsolidated ☐ cluses: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: effle ☐ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method; then total; tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT Obvious signs; tick box(es)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Re-sectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

whole 500m section of chalk stream dry, small stagnant ponds, dead by farm - mostly ferns, silt, etc.

W SPECIAL FEATURES eg. arbours, adjacent habitats of high interest, incidental sightings

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒ - R4 River

Y TIME TAKEN 20 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JE. HELPLINE NUMBERS: PETER FOX 721214; PAUL KAY 736343; ANDREW BROOKS 7255712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

3. DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.25	Bank full width (m) 3.40	Bank full height (m) 0.25
Bank height if different (m) 0.70	Water width (m) 2.89	Bank height if different (m) 1.25
Embanked height (m) -	Water depth (m) 0.55	Embanked height (m) -

Bed material at site is: consolidated ☒ clast: algal growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg. overbank water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)
Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then insert tick "none" where appropriate

Noise ☒ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick **barrier**

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> State <input type="checkbox"/>

T. CHANNEL CHANGES
Is 33% or more of the channel over 500m rippled with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No tick to indicate absence of species

Glenn Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE Describe 1/ spot checks representative of site (e.g. whole reach)
V-shaped, forested channel stream bordered by riparian forest
River water channel vegetation composed mainly of grasses, sedge, etc.
Special features: no obvious signs of high energy, occasional debris




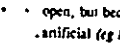

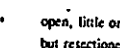

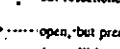
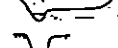
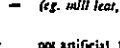

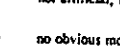
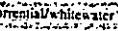
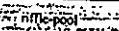
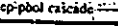
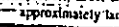

W. SPECIAL FEATURES (tick boxes) No tick to indicate absence of high energy, occasional debris
suffering channel sometimes in dry

X. RIVER TYPING Refer to photographs of river type and indicate which resembles the site best

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN 60 min

Z. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, 14 NORTH WEST ROAD, MILLICAP FARM, LUDLOW HOUSE, WARRINGTON, WARRINGTON
TELEPHONE NUMBERS: PETER FOX 0745 444 444, PAUL RAVEN 0745 444 444, ANDREW BROWN 0745 444 444

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION			
A. BACKGROUND INFORMATION: This information is being collected separately.			
Altitude(m)	Slope	Mean Annual Flow category (1-10)	
Solid geology	Drift geology	Planform category	
Distance from source(km)			
B. FIELD SURVEY DETAILS: Complete all questions			
Site number: 210	River Sydenham L66	Mid-section grid reference if different from designated site:	
Grid Reference: TA055726			
Date: 12/11/1994	Start time: 4:18 pm	Surveyor name: J. H. H. / J. H. H.	
Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, state _____			
Bed of river visible? No <input type="checkbox"/> partially <input checked="" type="checkbox"/> entirely <input type="checkbox"/> (tick one box)			
Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box) ③			
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box) ④			
Site surveyed from: left bank <input type="checkbox"/> right bank <input type="checkbox"/> both banks <input type="checkbox"/> channel <input checked="" type="checkbox"/>			
C. PREDOMINANT VALLEY FORM: (tick one box only)		D. PREDOMINANT CHANNEL FORM: (tick one box only)	
	<input type="checkbox"/> vee		<input type="checkbox"/> predominantly culverted
	<input type="checkbox"/> concave/bowl		<input type="checkbox"/> open, but bed or banks predominantly artificial (eg bar reinforced)
	<input type="checkbox"/> stepped valley floor (terraced)		<input type="checkbox"/> open, little or no obvious reinforcement, but sectioned and/or realigned
	<input checked="" type="checkbox"/> symmetrical		<input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke)
	<input type="checkbox"/> asymmetrical		<input type="checkbox"/> not artificial, but dammed
	<input type="checkbox"/> gorge		<input type="checkbox"/> no obvious modification ('semi-natural')
E. NAVIGATION: (tick one box only)			
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>			
F. PREDOMINANT FLOW TYPE: (tick one box only)			
	<input type="checkbox"/> intermittent/whirlwater		<input type="checkbox"/> riffle pool
	<input type="checkbox"/> step-pool cascade		<input checked="" type="checkbox"/> approximately laminar
			<input type="checkbox"/> impounded

[illegible]

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 227

LAND USE WITHIN 500m OF RIVER (tick one box per bank)

Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

Left bank None ☐ Banklength % = 50

Right bank None ☐ Banklength % = 50

BANK PROFILES WITHIN 500m (tick one box per bank)

Natural/unmodified			Artificial/unmodified		
Vertical/undrained			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

Left bank None ☐ Banklength % = 50

Right bank None ☐ Banklength % = 50

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

Trees			Associated features		
Isolated/scattered			Shading of channel		
Regularly spaced, single			Overhanging boughs		
Occasional clumps			Exposed bankside roots		
Semi-continuous			Underwater tree roots		
Continuous			Fallen trees		
			Woody debris		

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles = <u>2</u>			Unvegetated Point Bars =		
Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Natural island(s)		
Stale flow (duck)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

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ENTER SITE NUMBER 227

CHANNEL DIMENSIONS (measure at one site on a straight uniform section, preferably across a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	<u>0.4</u>	Bankfull width (m)	<u>1.0</u>	Bankfull height (m)	<u>0.4</u>
Bank height if different (m)	<u>0.65</u>	Water width (m)	<u>1.40</u>	Bank height if different (m)	<u>0.8</u>
Embanked height (m)		Water depth (m)	<u>0.25</u>	Embanked height (m)	

Bed material at site is:

consolidated	<input type="checkbox"/>	clean: slight growth compact, stable	<input type="checkbox"/>
unconsolidated	<input type="checkbox"/>	clean: fresh clean gravel, easily dislodged, loose	<input type="checkbox"/>
unknown	<input type="checkbox"/>	inaccessible or not visible (eg turbid water)	<input type="checkbox"/>

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Significant tributaries within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature, where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 9 Sand dunes = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

BANKS		CHANNEL	
None	<input type="checkbox"/>	None	<input type="checkbox"/>
Resectioning	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-sloping	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per species)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (write a short sentence representative of the site)

Small meandering chalk stream in large resectioned channel. Stream appears to be trying to narrow to a more natural course in over-widened channel.

SPECIAL FEATURES (tick one box per feature)

Epilobium hircinum growing in channel - suggests stream subject to low flow.

RIVER TYPING (tick one box per type)

Number (1-14) 12 Name of type 12

TIME TAKEN 50 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAMPED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-18-4341; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (this information is being collected separately)

Altitude (m) 584.28690 Slope 1:30 Mean Annual Flow category (1-10) 3

Solid geology Drift geology Planform category 3

Distance from source (km) 3.0

FIELD SURVEY DETAILS (complete all questions)

Site number: 227 River Sydney River mid-section grid reference if different from designated site: 584.28690

Date: 29/4/1994 Start time: 9:30 Surveyor name: IAN WILSON / BILL WATKINS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state if yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 6

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 3

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

vec	<input type="checkbox"/>
concave/bowl	<input type="checkbox"/>
stepped valley floor (terraced)	<input type="checkbox"/>
symmetrical	<input checked="" type="checkbox"/>
asymmetrical	<input type="checkbox"/>
gorge	<input type="checkbox"/>

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted	<input type="checkbox"/>
open, but bed or banks predominantly artificial (eg box reinforced)	<input type="checkbox"/>
open, little or no obvious reinforcement, but resectioned and/or realigned	<input checked="" type="checkbox"/>
open, but predominantly artificially dug (eg. mill leat, dyke)	<input type="checkbox"/>
not artificial, but dammed	<input type="checkbox"/>
no obvious modification ('semi-natural')	<input type="checkbox"/>

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater	<input type="checkbox"/>	riffle-pool	<input type="checkbox"/>	static	<input type="checkbox"/>
step-pool cascade	<input type="checkbox"/>	approximately laminar	<input checked="" type="checkbox"/>	impounded	<input type="checkbox"/>

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ENTER SITE NUMBER 227

SPOT CHECKS (25m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width at 2m, 5m, 10m)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BR	GR	GR	GR	GR	GR	GR	GR	GR	GR
- bank modification (one entry only)	CL	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank features (i)	UO	WO	WO	WO	WO	WO	WO	WO	WO	WO
CHANNEL										
Predominant channel substrate (one entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification (i)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel features (i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GR	GR	GR	GR	GR	GR	GR	GR	GR	GR
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank features (i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed across channel width at 2m, 5m, 10m)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION TYPES (tick one box per type, where appropriate)

NONE (tick as appropriate)

Liverworts/mosses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent herbs - water cress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent reeds/rushes (epilobium hircinum)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flowering-leaved (channel)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free-floating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amphibious - grasses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Submerged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filamentous algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Use end column for overall assessment over 500m (use E or I)

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ATLANTIC BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source(km) Drift geology Planform category

FIELD SURVEY DETAILS: Complete all questions

Site number: 123 River: KODJ Mid-section grid reference if different from designated site: TAO87615
Date: 18/5/1994 Start time: 11:35 Surveyor name: J. W. GUNN / B. L. WATSON (I/O)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (a)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box) (b)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)

☐ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ step-pool cascade ☐ approximately laminar ☒ static ☐ impounded ☐

Spot check I is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within 0.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9
LEFT BANK									
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL									
Predominant channel substrate (one entry only)	GP	SL	GP	SL	GP	SL	GP	SL	GP
Predominant flow type (one entry only)	AL	AL	PO	AL	ML	ML	PO	AL	ML
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK									
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO
VEGETATION STRUCTURE: (to be assessed across 10m wide zone) Fill in each box with one entry only									
B = bare U = uniform S = simple C = complex Refer to spot-check key									
LEFT RIPARIAN ZONE (if none, enter NO)	NO	US	S	S	S	C	S	S	S
LEFT BANK	B	S	S	U	U	S	S	S	S
RIGHT BANK	S	S	S	U	U	U	S	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	U	NO	NO	NO	S	S	S	S
CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry; use B, S, C, U, NO, or green)									
NONE (tick as appropriate)									
Emergent herbs - <i>Sagittaria</i>									
Emergent forbs - <i>Utricularia</i>									
Emergent forbs - <i>Utricularia</i>									
Free-floating - <i>Utricularia</i>									
Amphibious									
Submerged - <i>Utricularia</i>									
Filamentous algae - <i>Utricularia</i>									

Use end return for overall assessment over 500m (use E or F)

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ENTER SITE NUMBER: 123

LAND USE WITHIN 500m OF RIVER: (tick one box per feature)

	L	R		L	R
Broadleaved woodland			Dog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/hedge pasture			Suburban/rural development		

Left bank: None ☐ Banklength % = 10 Right bank: None ☐ Banklength % = 70

BANK PROFILES WITHIN 500m: (tick one box per feature)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/unmodified			Resectioned		
Vertical + toe			Reinforced - whole bank		
Step (>45°)			Reinforced - top only		
Grate			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

ENTIRE EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

NATURAL CHANNEL FEATURES: (tick one box per feature)

	Number of Riffles	Number of Pools	Unvegetated Point Bars	Vegetated Point Bars
Waters/streams				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Stille flow (slack)				
Exposed bedrock				
Exposed boulders				

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ENTIRE EXTENT OF CHANNEL DIMENSIONS AND INFLUENCES: (tick one box per feature)

	Left Bank	Channel	Right Bank
Bank full height (m)	0.10	10.70	Bank full height (m)
Bank height if different (m)		Water width (m)	Bank height if different (m)
Embanked height (m)		Water depth (m)	Embanked height (m)

Bed material at site: consolidated ☒ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ Inaccessible or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☒ other ☐ (tick one box)

STIMULATING: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: (tick one box per feature)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT: (tick one box per feature)

	BANKS	CHANNEL
None		
Resectioning		
Bank-cowling		
Enhancement		

CHOKED CHANNEL: (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES: (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (tick one box per feature)

Meaning: (tick one box per feature)

SPECIAL FEATURES: (tick one box per feature)

Number (1-14) ☐ None of them ☐

CHECK TIME TAKEN: (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-434; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 229

LAND USE WITHIN 500M OF RIVER (tick one box per feature)

Broadleaf/mixed woodland	<input checked="" type="checkbox"/>	Dog, marsh, fen	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	Improved/semi-improved grass	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	Tilled land	<input checked="" type="checkbox"/>
Scrub/heath pasture	<input type="checkbox"/>	Suburban/urban development	<input type="checkbox"/>

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % = 70

BANK PROFILES WITHIN 500M OF RIVER (tick one box per feature)

Natural/unmodified	<input checked="" type="checkbox"/>	Artificial/unmodified	<input type="checkbox"/>
Vertical/undercut	<input type="checkbox"/>	Resectioned	<input checked="" type="checkbox"/>
Vertical + toe	<input type="checkbox"/>	Reinforced - whole bank	<input type="checkbox"/>
Steep (> 45°)	<input type="checkbox"/>	Reinforced - top only	<input type="checkbox"/>
Grass	<input type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>
Composites	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>
		Pitched	<input type="checkbox"/>

EMENDMENTS (tick one box per feature)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
(None)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Standing of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bank-side roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles =	None	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade	<input checked="" type="checkbox"/>	Unvegetated mid-channel bars	None
Torrential flow (rapid)	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	Mixing islands	<input type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight undisturbed section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embarked height (m)	Water depth (m)	Embarked height (m)

Bed material at site is: consolidated ☒ clay: silt/clay growth compact, stable
unconsolidated ☐ clay: fresh clean gravel, easily dislodged, loose
unknown ☐ incompressible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = Width = Bridge = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

BANKS	CHANNEL
None	None
Resectioning	Dredging
Bank-mowing	Wood-cutting
Enhancement	Enhancement works

CHOICED CHANNELS (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Channel narrowing, exposed bank, channel full of terrestrial vegetation, surrounded by floodplain, channel full of terrestrial vegetation, surrounded by floodplain

SPECIAL FEATURES (tick one box per feature)

RIVER TYPE (tick one box per feature)

Number (1-14) None of them ☐

TIME TAKEN (tick one box per feature)

60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FARCLOUGH HOUSE, WARRINGTON, WA4 1TB. HELPLINE NUMBERS: PETER FOX 731-3146; PAUL RAYEN 731-4343; ANDREW BROOKES 731-5113

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drain geology Planform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 229 River: SPS61 Mid-section grid reference if different from designated site: TA156799

Date: 11.4.1994 Start time: 10.00 Surveyor name: P. L. HITCHCOCK/FOUR

Are conditions affecting survey? No ☒ Yes ☐ (if yes, state)

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 8

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 9

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 0.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	GP	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

KEY: B = bare U = uniform S = slope C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)

1	2	3	4	5	6	7	8	9	10
U	U	U	U	U	U	U	U	U	U

RIGHT RIPARIAN ZONE (if none, enter NO)

1	2	3	4	5	6	7	8	9	10
U	U	U	U	U	U	U	U	U	U

CHANNEL VEGETATION TYPES (tick one box per feature)

NONE (tick one box per feature)

Liverworts/mosses ☐

Emergent herbs ☐

Emergent reed/sedges - Phragmites ☐

Floating-leaved ☐

Free-floating ☐

Amphibious ☐

Submerged ☐

Filamentous algae ☐

Use end column for overall assessment over 500m (use E or A)

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WATER SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

GENERAL PHYSICAL ATTRIBUTES (to be assessed across channel within 1m wide zone)

Fill in each bar before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	ST	ST	ST	U	ST	CC	ST	BR	CO	ST
- bank modification (one entry only)	W	W	W	W	W	W	W	W	W	W
- bank feature(s)	W	W	W	W	W	W	W	W	W	W
CHANNEL										
Predominant channel substrate (one entry only)	BO	SL	CO	SP	CO	W	CO	SL	CO	CO
Predominant flow type (one entry only)	ST	ST	ST	U	ST	?	ST	ST	ST	U
- channel modification(s)	W	W	W	W	W	W	W	W	W	W
- bank feature(s)	W	W	W	W	W	W	W	W	W	W
RIGHT BANK										
Predominant bank material (one entry only)	ST	ST	ST	ST	ST	CC	BO	ST	CO	ST
- bank modification (one entry only)	W	W	W	W	W	W	W	W	W	W
- bank feature(s)	W	W	W	W	W	W	W	W	W	W
VEGETATION STRUCTURE (to be assessed over a 10m wide stretch); fill in each box with one entry only										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	W	U	S	W	U	W	U	U	U
LEFT BANK	S	S	S	S	S	U	U	U	U	U
RIGHT BANK	S	U	U	S	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	W	U	W	U	W	U	U	U	U	U
VEGETATION TYPE (to be assessed over a 10m wide stretch); fill in each box with one entry: use B, C, S, U, or ? (optional)										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use B, C, S, U, or ?)

20 April 1994				RIVER HABITAT SURVEY				VERIFICATION			
CHANNEL DIMENSIONS AND INFLUENCES CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably straight and unobstructed											
LEFT BANK		CHANNEL				RIGHT BANK					
Bankfull height (m)		0.4		Bankfull width (m)		1.00		Bankfull height (m)		0.5	
Bank height if different (m)		—		Water width (m)		0.60		Bank height if different (m)		—	
Embankment height (m)		—		Water depth (m)		0.01		Embankment height (m)		—	
Bed material at site is: consolidated <input checked="" type="checkbox"/> chest: algal growth compact, stable unconsolidated <input type="checkbox"/> chest: fresh clean gravel, easily dislodged, loose unknown <input type="checkbox"/> inaccessible or not visible (eg turbid water)											
Location of measurements is: riffle <input type="checkbox"/> run or glide <input type="checkbox"/> other <input checked="" type="checkbox"/> (tick one box) dune											
Significant tributaries (tick one box only)											
Significant tributary within 500m length? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>											
NUMBER OF ARTIFICIAL FEATURES (Use tally method then total, tick none where appropriate)											
None <input type="checkbox"/>		Number of Culverts = 2		Weirs = —		Bridges = 2		Outfalls = —			
EVIDENCE OF RECENT MANAGEMENT (tick one box only)											
BANKS		L		R		CHANNEL					
None		<input type="checkbox"/>		<input checked="" type="checkbox"/>		None		<input checked="" type="checkbox"/>			
Resectioning		<input type="checkbox"/>		<input type="checkbox"/>		Dredging		<input type="checkbox"/>			
Bank-moving		<input type="checkbox"/>		<input type="checkbox"/>		Wood-cutting		<input type="checkbox"/>			
Enhancement		<input type="checkbox"/>		<input type="checkbox"/>		Enhancement works		<input type="checkbox"/>		State	
CHOKED CHANNEL (tick one box only)											
Is 33% or more of the channel over 500m choked with vegetation? No <input type="checkbox"/> YES <input type="checkbox"/>											
NOTABLE NUISANCE PLANT SPECIES (tick one box only) (No need to estimate abundance)											
Giant Hogweed <input type="checkbox"/>		Himalayan Balsam <input type="checkbox"/>		Japanese Knotweed <input type="checkbox"/>							
BRIEF DESCRIPTIVE SENTENCE (Under 100 characters)											
Very small Beck with overgrown reeds, mostly static flow, mostly overgrown banks/obstacles in channel. Beck covered under ferns and											
SPECIAL FEATURES (tick one box only)											
None											
RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)											
Number (1-14) <input type="checkbox"/>		None of them <input checked="" type="checkbox"/>									
TIME TAKEN (in minutes) 45 min											
CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE HELPLINE NUMBERS: PETER FOX 7-21-2149; PAUL RAVEN 7-10-4343; ANDREW BROOKS 7-25-5113											

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SH	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	NV	NV	NV	NV	NV	CO	CO	NV	NV	NV
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	C	C	C	C	C	S	NO	NO
LEFT BANK	S	S	C	C	C	C	C	S	S	S
RIGHT BANK	C	C	C	C	C	C	C	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% area) or U (percent) = %)

	1	2	3	4	5	6	7	8	9	10
None (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Liverworts/mosses										
Emergent herbs										
Emergent reeds/rushes										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use L or R)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER

SWEEP UP OVER 500m

LAND USE WITHIN 50m OF RIVER (tick C (≥ 33% banklength) or U (percent) = %)

	L	R		L	R
Broadleaf/woodland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (U percent) = %)

Left bank: None ☐ Banklength % = 80 Right bank: None ☐ Banklength % = LC

L. BANK PROFILES WITHIN 500m. Use E (≥ 33% banklength) or U (percent) = %

	L	R		L	R
Natural/Unmodified			Artificial/Modified		
Vertical/handcut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Re-sectioned		
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank		
Steep (> 45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial (two-stage)		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength (U percent) = %)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	E ≥ 33%			
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Understorey tree roots	<input type="checkbox"/>	<input type="checkbox"/>	
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	
			Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of:	Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 239 River: MDD Mid-section grid reference if different from designated site: S5356556

Date: 20.11.1994 Start time: 10.30 Surveyor name: Tim Shaw/Bill Hargreaves

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (31)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (32)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

	<input type="checkbox"/> vee
	<input checked="" type="checkbox"/> concave/bowl
	<input type="checkbox"/> stepped valley floor (terraced)
	<input type="checkbox"/> symmetrical
	<input type="checkbox"/> asymmetrical
	<input type="checkbox"/> gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

<input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed
<input checked="" type="checkbox"/> no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

<input type="checkbox"/> torrential/whitewater	<input type="checkbox"/> riffle-pool	<input type="checkbox"/> static
<input type="checkbox"/> step-pool cascade	<input checked="" type="checkbox"/> approximately laminar	<input type="checkbox"/> impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☒ chest algal growth compact, stable
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

2. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

3. NUMBER OF ARTIFICIAL FEATURES (Use tally method; then total; tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

4. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Reseeding <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

5. CHOKED CHANNEL (Is 33% or more of the channel over 500m choked with vegetation?) No ☒ YES ☐

6. NOTABLE NUISANCE PLANT SPECIES (tick box(es)) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

7. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Large machine slow flowing river. Rocky wooded river. Consider limestone area.

8. SPECIAL FEATURES (eg known important habitats of high interest; incidental sightings)

Himalayan Balsam extensive on both river banks.

9. DRIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

10. TIME TAKEN 90 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-16-434; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
 Solid geology Distance from source(km) Platform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 240 River Name: Mid-section grid reference if different from designated site:
 Grid Reference: S4456544 Date: 21.4.1994 Start time: 1300 Surveyor name: Paul Henning

Are conditions affecting survey? No ☐ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but reseeded and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater ☐ riffle pool ☐ step pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 3m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	GA	CA	EA	CA	CA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	SC	SC	SC	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (see entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	S	NO	NO	NO	NO	NO	NO
LEFT BANK	S	S	S	U	U	S	S	S	S	S
RIGHT BANK	S	S	S	U	U	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (tick in relevant box(es) with one entry only; tick 8 (ca 33% area) or 9 (present) 34%

NONE (tick as appropriate)

Algae/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										

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J. SWEET-SPOT OVER 500m ENTER SITE NUMBER

K. LAND USE WITHIN 50m OF RIVER (Use 8 (ca 33% banklength) or 9 (present) 34%)

	L	R
Broadleaved woodland		
Coniferous plantation		
Moorland heath		
Scrub/rough pasture		
Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength 2 = Right bank: None ☐ Banklength 3 =

M. BANK PROFILES WITHIN 500m (Use 8 (ca 33% banklength) or 9 (present) 34%)

	L	R
Natural/unmodified		
Vertical undercut		
Vertical toe		
Steep (> 45°)		
Gravel		
Composite		
Artificial/modified		
Revetment		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial toe-sillage		
Poached		

N. ENBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength 8 = 100 Right bank: None ☐ Banklength 9 = 100

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bank-side roots		
Underwater tree roots		
Fallen trees		
Woody debris		

P. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles = 0	Pools = 1	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Waterfall/overfalls				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Shallow flow (shoal)				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Shallow islands				
Unvegetated side bars				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within 5m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	NU	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modifications	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	S	S	C	C	S	S	S	S	S
RIGHT BANK	U	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only, B (ca 33% area) or C (greater) if appropriate)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Livers art/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 21

J. LAND USE WITHIN 500m OF RIVER (Use E (ca 33% banklength) or I if present)

	L	R		L	R
Broadleaved woodland			Bay, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Waterland/peat			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick, none, but or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = ... Right bank: None ☐ Banklength % = ...

L. BANK PROFILES WITHIN 500m, Use E (ca 33% banklength) or I if present

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical undercut			Reinforced - whole bank		
Vertical + toe			Reinforced - top only		
Steep (>45°)			Reinforced - toe only		
Gentle			Artificial two-stage		
Composite			Perched		

M. EMBANKMENTS (tick, none, but or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right	E (ca 33%)	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						
Shading of channel						
Overhanging boughs						
Exposed bankside roots						
Underwater tree roots						
Fallen trees						
Woody debris						

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	Number of riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	None	Present	None	Present
Waterfall/cascade			Unvegetated mid-channel bars	
Torrential flow (rapids)			Vegetated mid-channel bars	
Lapine flow (run/glide)			Mature island(s)	
Bank flow (back)			Unvegetated side bar	

P. 23/24

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

Q. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	3.0	Bank full width (m)	26.0
Bank height if different (m)	1.0	Water width (m)	19.0
Embankment height (m)	6.0	Water depth (m)	1.50
		Embankment height (m)	5.0

Bed material at site is: consolidated ☐ chert: algal growth compact, stable
unconsolidated ☐ chert: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid + fast)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

S. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick none where appropriate)

None ☒ Number of Culverts = Wells = Bridges = Outfalls =

T. EVIDENCE OF RECENT MANAGEMENT (tick one box only)

	L	R	CHANNEL
Banks			None
Resectioning			Dredging
Bank-mowing			Wood-cutting
Enhancement			Enhancement works

U. CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present; tick none if absent)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

W. BRIEF DESCRIPTIVE SENTENCE (underline if spot check; otherwise, use full sentence)

To deep to get in. but will give for substrate of bed.

X. SPECIAL FEATURES (tick one box only)

Y. RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☒

Z. TIME TAKEN (tick one box only)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

A. BACKGROUND INFORMATION (this information is being collected separately)

Altitude (m) Solid geology Distance from source (km) Slope Drift geology Mean Annual Flow category (1-10) Platform category

B. FIELD SURVEY DETAILS (complete all questions)

Site number: 241 River 0456 Mid-section grid reference if different from designated site: 5655454

Date 17.7.1994 Start time: 1500 Surveyor name: PAUL HENVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vee
concave/bowl
stepped valley floor (terraced)
symmetrical
asymmetrical
gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted
open, but bed or banks predominantly artificial (eg box reinforced)
open, little or no obvious reinforcement, but resectioned and/or realigned
open, but predominantly artificially dug (eg mill leat, dyke)
not artificial, but dammed
no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

high water
low water
appropriate laminar
impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably against a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	2.1	Bank full width (m)	30	Bank full height (m)	2.1
Bank height if different (m)	3.5	Water width (m)	26	Bank height if different (m)	2.5
Embanked height (m)	1.0	Water depth (m)	2	Embanked height (m)	1.50

Bed material at site is: consolidated ☐ clay; silt; gravel; compact, stable
unconsolidated ☐ clean fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Significant tributaries (tick one box only): ☐ No ☐ Yes

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total, tick, none, where appropriate)

None ☐ Number of Culverts = Wells = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	CHANNEL
None <input type="checkbox"/>	None <input type="checkbox"/>
Revetting <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-narrowing <input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOKED CHANNEL (tick one box only)

Is 35% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present in substantial abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box only)

Large, deep, narrow, fast, clear water, extensive riparian vegetation, no obvious artificial features

SPECIAL FEATURES (tick one box only)

RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☒

TIME TAKEN

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Distance from source (km) Planform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 242 River site: Beech Mid-section grid reference if different from designated site: S557555

Date: 12/11/1994 Start time: 1430 Surveyor name: PAUL HENNILLS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (e.g. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ step-pool cascade ☐ approximately laminar ☒ static ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

GO'S PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EE	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	RJ	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
- channel modification(s)	NO	RS	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SC	NO	SC	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (tick one box only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if name, enter NO)	NO	NO	S	S	S	S	NO	NO	U	C
LEFT BANK	U	U	S	S	S	S	S	S	S	C
RIGHT BANK	S	S	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if name, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

USING CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry, use B (2-3% bare) or U (uniform))

NONE (tick as appropriate)

Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for draft assessment over 500m (one of 2)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 3

LAND USE WITHIN 500M OF RIVER (tick one box only)

Left bank None ☐ Banklength % = 70 Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500M (tick one box only)

Natural/unmodified ☐ L R Artificial/modified ☐ L R

Vertical/undercut ☒ Vertical + toe ☒ Step (> 45°) ☒ Gentle ☒ Composite ☐

Revetment ☐ Reinforced - whole bank ☐ Reinforced - top only ☐ Reinforced - toe only ☐ Artificial two-stage ☐ Paved ☐

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

Trees (tick one box per bank)

None	Left	Right	% > 35%	None	Present
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Small continuous					
Continuous					

Associated features (tick one box per feature)

Shading of channel				
Overhanging boughs				
Exposed bankside roots				
Underwater tree roots				
Fallen trees				
Woody debris				

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of Riffles = 2 Pools = 0 Unvegetated Point Bars = 0 Vegetated Point Bars = 0

Waterfall/cascade ☐ Torrential flow (rapids) ☐ Laminar flow (run/glide) ☐ Shallow flow (shallow) ☐ Exposed bedrock ☐ Exposed boulders ☐

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐ Mature island(s) ☐ Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 2

LAND USE WITHIN 500M OF RIVER: U/E (2/3) (tick one box)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width at 10m intervals)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) (fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION TYPES (to be assessed over a 10m wide reach) (fill in each box with one entry only)

None (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 2

LAND USE WITHIN 500M OF RIVER: U/E (2/3) (tick one box)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width at 10m intervals)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) (fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION TYPES (to be assessed over a 10m wide reach) (fill in each box with one entry only)

None (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 2

LAND USE WITHIN 500M OF RIVER: U/E (2/3) (tick one box)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width at 10m intervals)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) (fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION TYPES (to be assessed over a 10m wide reach) (fill in each box with one entry only)

None (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 2

LAND USE WITHIN 500M OF RIVER: U/E (2/3) (tick one box)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width at 10m intervals)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) (fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION TYPES (to be assessed over a 10m wide reach) (fill in each box with one entry only)

None (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____ Drift geology _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Distance from source (km) _____ Planform category _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 244 River: M... 13.7 d Mid-section grid reference if different from designated site: _____
Grid Reference: 56641528 Date: 17.5.1994 Start time: 17.0 Surveyor name: P. M. PENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only):

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only):

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only):

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 2.25	Bankfull width (m) 2.75	Bankfull height (m) 1.25
Bank height if different (m) 2.10	Water width (m) 1.50	Bank height if different (m) 2.10
Embanked height (m) _____	Water depth (m) 0.20	Embanked height (m) _____

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use grid method (tick total tick) _____

None ☒ Number of: Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (tick one box only):

DAMS: None ☒ Resectioning ☐ Bank-crowding ☐ Enhancement ☐

CHANNEL: None ☒ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL: (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NO. OF ADJACENT PLANT SPECIES (tick box(es) - No need to estimate abundance):

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box only):

LEFT BANK: (tick one box only)

RIGHT BANK: (tick one box only)

SPECIAL FEATURES: (tick one box only)

RIVER TYING: (tick one box only)

Number (1-14) ☒ None of them ☐

TIME TAKEN: 45 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TB. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____ Drift geology _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Distance from source (km) _____ Planform category _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 244 River: M... 13.7 d Mid-section grid reference if different from designated site: _____
Grid Reference: 56641528 Date: 17.5.1994 Start time: 17.0 Surveyor name: P. M. PENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only):

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only):

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only):

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 2.25	Bankfull width (m) 2.75	Bankfull height (m) 1.25
Bank height if different (m) 2.10	Water width (m) 1.50	Bank height if different (m) 2.10
Embanked height (m) _____	Water depth (m) 0.20	Embanked height (m) _____

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use grid method (tick total tick) _____

None ☒ Number of: Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (tick one box only):

DAMS: None ☒ Resectioning ☐ Bank-crowding ☐ Enhancement ☐

CHANNEL: None ☒ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL: (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NO. OF ADJACENT PLANT SPECIES (tick box(es) - No need to estimate abundance):

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box only):

LEFT BANK: (tick one box only)

RIGHT BANK: (tick one box only)

SPECIAL FEATURES: (tick one box only)

RIVER TYING: (tick one box only)

Number (1-14) ☒ None of them ☐

TIME TAKEN: 45 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TB. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____ Drift geology _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Distance from source (km) _____ Planform category _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 244 River: M... 13.7 d Mid-section grid reference if different from designated site: _____
Grid Reference: 56641528 Date: 17.5.1994 Start time: 17.0 Surveyor name: P. M. PENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only):

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only):

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only):

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 2.25	Bankfull width (m) 2.75	Bankfull height (m) 1.25
Bank height if different (m) 2.10	Water width (m) 1.50	Bank height if different (m) 2.10
Embanked height (m) _____	Water depth (m) 0.20	Embanked height (m) _____

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use grid method (tick total tick) _____

None ☒ Number of: Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (tick one box only):

DAMS: None ☒ Resectioning ☐ Bank-crowding ☐ Enhancement ☐

CHANNEL: None ☒ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL: (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NO. OF ADJACENT PLANT SPECIES (tick box(es) - No need to estimate abundance):

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box only):

LEFT BANK: (tick one box only)

RIGHT BANK: (tick one box only)

SPECIAL FEATURES: (tick one box only)

RIVER TYING: (tick one box only)

Number (1-14) ☒ None of them ☐

TIME TAKEN: 45 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TB. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

TEN SPOT CHECKS (ca 500m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 1m wide, central section)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	CA	EA	EA	EA	SP	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	RI	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	SP	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	U	S	S	S	S	S	U			
RIGHT BANK	S	S	S	S	S	S	U			

RIGHT RIPARIAN ZONE (if none, enter NO)

	1	2	3	4	5	6	7	8	9	10
RIGHT BANK	NO	NO	NO	NO	NO	NO	NO			

VEGETATION TYPES (fill in relevant boxes with one entry, tick one box per feature)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent root/edges										
Flowering-leaved										
Fern-flowering										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick one box)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 2

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

	L	R		L	R
Broadleaf/deciduous woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank None ☐ Backlength = 100 Right bank None ☐ Backlength = 0

BANK PROFILES WITHIN 500m (tick one box per feature)

	L	R		L	R
Natural/unmodified			Artificially modified		
Vertical/horizontal			Recessed		
Vertical + toe			Reinforced - whole bank		
Slope (>45°)			Reinforced - top only		
Grade			Reinforced - toe only		
Composite			Artificial two-stage		
			Recessed		

CEMENTATION (tick one box per feature)

Left bank None ☒ Backlength = 0 Right bank None ☒ Backlength = 0

ENTRYP, GRATES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)

	Left	Right	5-10%	None	Present	0
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Small continuous						
Continuous						

ASSOCIATED FEATURES (tick one box per feature)

	None	Present	0
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

OVER NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present	0
Number of riffles			
First one box per feature			
Waterfall/cascade			
Torrential flow (rapid)			
Laminar flow (run/glide)			
Stable flow (shock)			
Exposed bedrock			
Exposed boulders			

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

	CHANNEL	RIGHT BANK
Bank full height (m)	0.25	0.25
Bank height if different (m)	0.20	0.15
Bank height if different (m)	0.15	0.15
Bank height if different (m)	0.15	0.15

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (use GUY method, tick one box per feature)

	None	Number of	Culverts	Walls	Bridges	Outfalls
BANKS						
None						
Recessed						
Bank-mowing						
Enhancement						

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

	L	R	CHANNEL
None			
Dredging			
Wood-cutting			
Enhancement works			
State			

Is 33% or more of the channel over 500m checked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

	Giant Hogweed	Himalayan Balsam	Japanese Knotweed

BRIEF DESCRIPTIVE SENTENCE (Outline if spot check representative of site or note)

SPECIAL FEATURES (tick one box per feature)

	None	Number of	Culverts	Walls	Bridges	Outfalls
None						
Culverts						
Walls						
Bridges						
Outfalls						

RIVER TYPING (tick one box per feature)

	None	Number of	Culverts	Walls	Bridges	Outfalls
None						
Culverts						
Walls						
Bridges						
Outfalls						

TIME TAKEN 45 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX OR NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431140; FAX: 01925 431141; ANDREW BROOKES 01925 431142

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (this information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (complete all questions)

Site number: 245 River section: Mid-section grid reference if different from designated site: 5678910

Date: 13/6/1994 Start time: 1500 Surveyor name: PAUL HENNILL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box per feature)

	Yes	No
concave/bowl		
stepped valley floor (terraced)		
symmetrical		
asymmetrical		
gorge		

PREDOMINANT CHANNEL FORM (tick one box per feature)

	Yes	No
predominantly culverted		
open, but bed or banks predominantly artificial (eg box reinforced)		
open, little or no obvious reinforcement, but resectioned and/or realigned		
open, but predominantly artificially dug (eg mill race, dyke)		
not artificial, but dammed		
no obvious modification ('semi-natural')		

NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

	Yes	No
torrential/whitewater		
step-pool cascade		
riffle-pool		
approximately laminar		
stagnant		
impounded		

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 90	Bankfull width (m) 2.75	Bankfull height (m) 9
Bank height if different (m) 220	Water width (m) 1.40	Bank height if different (m) 2m
Embanked height (m)	Water depth (m) .05	Embanked height (m)

Bed material at site is: consolidated ☐ chest: silt/clay growth compact, stable
 unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use full name, then tick, none where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 2 Outfalls = 10

EVIDENCE OF RECENT MANAGEMENT (Current year tick one box)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-culling
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			Site

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE INVASIVE PLANT SPECIES (tick one box) (see list on separate sheet)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use full name, then tick, none where appropriate)

ONLY SECTION WATER COURSE DESCRIBED - THE REMAINDER OF THE CHANNEL

Section 1: 100m upstream of site - ALMOST DAY TIME FLOW IN BOTTOM 100m

SPECIAL FEATURES (tick one box)

RIVER TYPE (tick one box)

Number (1-14) ☒ None of them ☐

TIME TAKEN: 45 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FURCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3149; PAUL RAYEN 7-10-443; ANDREW BROOKES 7-15-5712

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 245 River Hull Mid-section grid reference if different from designated site: TA06553

Date: 14/5/1994 Start time: 15:30 Surveyor name: IAIN GUNN, BILL (SC) HUGHES

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (14)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (5)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorgo ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	FR	NO	NO	SC	NO	NO	SC
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	SC	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over 100m wide reach) Fill in each box with one entry only

B = bare U = uniform S = single C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	1	2	3	4	5	6	7	8	9	10
LEFT BANK	S	U	S	S	S	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (tick one box per bank)

None (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Utricularia/mosses										
Emergent beds										
Emergent (submerged)										
Flowering (reed)										
Free-floating										
Amphibious										
Submerged (Ceratophyllum sp.)										
Filamentous algae										

Use end column for overall assessment over 500m (use S or U)

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER: 245

USE WITHIN 500m OF RIVER (tick one box per bank)

	L	R
Broadleaf/mixed woodland		
Coniferous plantation		
Moorland/heath		
Scrub/bush pasture		
Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per bank)

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

BANK PROFILES WITHIN 500m (tick one box per bank)

	L	R
Natural/unmodified		
Vertical/undercut		
Vertical + toe		
Slope (> 45°)		
Gentle		
Composite		
Artificial/modified		
Revetting		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

	L	R
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (tick one box per bank)

	L	R
Number of riffles		
Waterfall/cascade		
Torrential flow (rapid)		
Laminar flow (run/glide)		
Silt flow (sluck)		
Exposed bedrock		
Exposed boulders		
Unvegetated Point Bars		
Vegetated mid-channel bars		
Vegetated mid-channel bars		
Mudbar island(s)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

GLACIA MARINA SPARGANIVM ERECTION

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be entered across channel within 5m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	110	110	110	110	110	110	110	110	110	110
Predominant channel substrate (one entry only)	S	S	S	S	S	S	S	S	S	S
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	110	110	110	110	110	110	110	110	110	110
Predominant bank material (one entry only)	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	110	110	110	110	110	110	110	110	110	110

VEGETATION STRUCTURE (to be entered across channel within 5m of site)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	110	110	110	110	110	110	110	110	110	110
LEFT BANK	S	U	S	U	S	U	S	U	S	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	110	110	110	110	110	110	110	110	110	110

USE IN CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

LAND USE WITHIN 50m OF RIVER (if 33% built-up or 10% paved)

	L	R
Broadleaf/deciduous woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (use 33% built-up or 10% paved)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

CHANNEL PROFILES WITHIN 50m OF RIVER (if 33% built-up or 10% paved)

	L	R
Natural/unmodified		
Vertical/handcut		
Vertical + toe		
Slope (> 45°)		
Gentle		
Composite		

Artificial/modified

	L	R
Recessed		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right	33% built-up	None	Present	B
None						
Isolated/handcut						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (tick one box per feature)

	None	Present	B
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

CHANNEL NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present	B
Number of riffles			
Waterfall/cascade			
Toroidal flow (rapids)			
Laminar flow (run/slide)			
Stille flow (slack)			
Exposed bedrock			
Exposed boulders			

UNVEGETATED POOL BARS

	None	Present	B
Unvegetated mid-channel bars			
Vegetated mid-channel bars			
Miscellaneous islands			
Unvegetated side bar			
Vegetated side bar			
Artificial			

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☒ close: algal growth compact, stable
unconsolidated ☐ close: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

CONTRIBUTORIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	L	R	CHANNEL
Recessing			None
Bank-mowing			Dredging
Enhancement			Weed-cutting
			Enhancement works

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

US NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (use spot check representative of site as a whole)

Chalk stream. Inactive meandering channel. Right bank has had some nascent growth of *Ranunculus*.

SPECIAL FEATURES (tick one box only)

Sand mounds + lots of trout present.

RIVER TYPING (tick one box only)

Number (1-14) 6 None of these ☐

TIME TAKEN 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NEW NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-18-1441; ANDREW BROOKES 7-25-5111

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BACKGROUND INFORMATION (tick one box only)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 247 River: SYE Slope: DYE Mid-section grid reference if different from designated site: TA163551

Date: 11/5/1994 Sun time: 14.00 Surveyor name: P. FOX

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 12

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 13

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

predominantly culverted

open, but bed or banks predominantly artificial (eg box reinforcement)

open, little or no obvious reinforcement, but recessed and/or realigned

open, but predominantly artificially dug (eg mill race, dyke)

not artificial, but dammed

no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

APRIL 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	0.65	Bankfull width (m)	3.9	Bankfull height (m)	0.65
Bank height if different (m)	2.3	Water width (m)	3	Bank height if different (m)	3.2
Embankment height (m)	-	Water depth (m)	0.4	Embankment height (m)	-

Bed material at site is: consolidated ☒ chest silt/glass compact, stable
 unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributaries? (tick one box only) Yes ☒ No ☐ (if yes, state:)

Number of artificial features: None ☐ Number of Culverts = Water = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT: (tick one box only) Banks: Resectioning ☐ Bank-moving ☐ Enhancement ☐ Channel: Dredging ☐ Weed-cutting ☐ Enhancement works ☐ Stone ☐

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

Unstable nuisance plant species (tick one box only): Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

Very short descriptive sentence: (Under 100 characters, type complete or a short phrase)
 Predominantly straight aligned dykes, flowing through predominantly narrow side channels

Special features: (tick one box only) Two parallel dykes connect with stream bed near upstream

River type: (tick one box only) None of them ☐ Number (1-14) ☐ 50 m/s

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4340; ANDREW BROOKES 7-21-3711

APRIL 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 2: BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS: (Complete all observations)

Site number: 255 River: A125 Mid-section grid reference if different from designated site: 580 4466

Date: 1.5.1994 Start time: 17:00 Surveyor name: J. A. Fox / S. D. Hughes

Are conditions affecting survey? No ☒ Yes ☐ (if yes, state:)

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (5)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (6)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only) vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM: (tick one box only) predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (e.g. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION: (tick one box only) Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only) torrential/whitewater ☐ step-pool cascade ☐ riffle-pool ☐ approximately laminar ☒ static ☐ impounded ☐

APRIL 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 3: SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Key: B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	U	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	S	S	S	S	S	S	S	S	S

RIGHT RIPARIAN ZONE (if none, enter NO)

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	U	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (tick one box only) NONE (tick one box only) Liverworts/mosses ☐ Emergent herbs ☐ Emergent root/leaves ☒ Floating-leaved ☐ Free-floating ☐ Amphibious ☐ Submerged ☒ Filamentous algae ☐

Use end column for overall assessment over 500m (use E or V)

APRIL 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 4: LAND USE WITHIN 50m OF RIVER (tick one box only)

ENTER SITE NUMBER: 255

	L	R	255
Broadleaf/mixed woodland			
Coniferous plantation			
Moorland/heath			
Scrub/heath pasture			
Suburban/urban development			

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

BANK PROFILES WITHIN 50m (tick one box only) Natural/unmodified ☒ Artificial/unmodified ☐ Vertical/undercut ☐ Resectioned ☐ Vertical + toe ☐ Reinforced - whole bank ☐ Steep (> 45°) ☐ Reinforced - top only ☐ Gentle ☐ Reinforced - toe only ☐ Composite ☐ Artificial two-stage ☐ Pooled ☐

EMBANKMENTS (tick one box only) Left bank: None ☒ Banklength % = 100 Right bank: None ☒ Banklength % = 100

TEXTURE OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)

	Left	Right	255
None			
Isolated/scattered			
Regularly spaced, single			
Occasional clumps			
Semi-continuous			
Continuous			

ASSOCIATED FEATURES (tick one box per feature)

	None	Present	255
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present	255
Number of riffles			
Waterfall/cascade			
Torrential flow (rapid)			
Laminar flow (run/glide)			
Stale flow (stagnant)			
Exposed bedrock			
Exposed boulders			

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TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G12 PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	DB	FA	DB	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	LY	LA	LA	LA	SS	LA	LA	LA	LA
- bank feature(s)	LA	LS	LY	EC	FA	LA	LA	LA	LA	LA
CHANNEL										
Predominant channel substrate (one entry only)	FA	CO	SY	CO	SA	SE	SS	SS	SS	SE
Predominant flow type (one entry only)	HK	PL	PL	AL	AL	ST	AL	AL	ST	PL
- channel modification(s)	CV	RS	LA	LA	LA	LA	LA	LA	LA	LA
- channel feature(s)	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
RIGHT BANK										
Predominant bank material (one entry only)	DB	FA	FA	FA	FA	FA	FA	FA	FA	FA
- bank modification (one entry only)	RS	LA	LA	LA	LA	LA	LA	LA	LA	LA
- bank feature(s)	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA
H. VEGETATION STRUCTURE (to be assessed pier a 10m wide transect). Fill in each box with one entry only.										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	LA	LA	S	U	U	U	LA	LA	LA	LA
RIGHT BANK	LA	S	S	U	U	LA	LA	LA	LA	S
LEFT BANK	LA	U	S	U	C	S	LA	LA	LA	S
RIGHT RIPARIAN ZONE (if none, enter NO)	LA	LA	S	S	C	S	S	LA	LA	LA
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B if > 33% area) (optional)										
NONE (tick as appropriate)	11%	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lianas/vines/mosses										
Emergent herbs								✓	✓	✓
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use U or S)

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 SWEEP-UP OVER 500m ENTER SITE NUMBER 2

 LAND USE WITHIN 50m OF RIVER: Use E (2.33% banklength) or U (percent banklength)

	L	R		L	R
Broadleaved woodland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/heath pasture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Suburban/urban development (road, garden, etc.)		

 LINEAR EXTENT OF RIPARIAN ZONE (Use E (2.33% banklength) or U (percent banklength))

Left bank None ☐ Banklength % = 46 Right bank None ☐ Banklength % =

 BANK PROFILES WITHIN 50m Use E (2.33% banklength) or U (percent banklength)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
• Vertical/underscut	<input checked="" type="checkbox"/>	<input type="checkbox"/>	• Resectioned		
• Vertical + toe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	• Reinforced - whole bank		
• Sloop (> 45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	• Reinforced - top only		
• Gully	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	• Reinforced - toe only		
• Composite	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	• Artificial two-stage		
			• Paved		<input checked="" type="checkbox"/>

 EMBANKMENTS (Use E (2.33% banklength) or U (percent banklength))

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

 EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)			ASSOCIATED FEATURES (Tick one box per feature)		
None	Left	Right	E > 13%	None	Present
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Regularity spread, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

 NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles = <u>0</u>	Pools = <u>0</u>	Unvegetated Point Bars = <u>0</u>	Vegetated Point Bars = <u>0</u>		
Tick one box per feature	None	Present	None	Present	
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/tide)	<input type="checkbox"/>	<input type="checkbox"/>	Maxwell Island(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unvegetated side bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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2. DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	7.40	Bankfull width (m)	70.00	Bankfull height (m)	7.40
Bank height if different (m)	6.00	Water width (m)	14.00	Bank height if different (m)	—
Embanked height (m)	6.00	Water depth (m)	2.00	Embanked height (m)	3.10

Bed material at site is: consolidated ☐ (check: algal growth compact, stable)
 unconsolidated ☐ (check: fresh clean gravel, easily dislodged, loose)
 unknown ☒ (check: not visible (eg turbid water))

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then totals tick, none where appropriate)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick box)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None <input type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-reworking	<input type="checkbox"/>	<input type="checkbox"/>	Wood-casting <input type="checkbox"/>
Embankment	<input type="checkbox"/>	<input type="checkbox"/>	Embankment works <input type="checkbox"/>
			Stake <input type="checkbox"/>

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (use only if necessary)

Large machine silt & gravel near channel in the increased pasture
 Banks resectioned with embankment (100% on both banks)







SPECIAL FEATURES (tick box)

RIVER TYPING (tick box)

Number (1-14) (12) Name of team ☐

TIME TAKEN (hh:mm:ss) 50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS
 TEL: 01925 436000 FAX: 01925 436001

29 April 1994			RIVER HABITAT SURVEY: 1994 VERIFICATION		Page 10	
A. BACKGROUND INFORMATION (This information is being collected separately)						
Altitude(m) Solid geology Distance from source(km)		Slope Drift geology		Mean Annual Flow category (1-10) Planform category		
B. FIELD SURVEY DETAILS Complete all questions						
Site number: 256		River: T. R.		Mid-section grid reference if different from designated site:		
Grid Reference: S3154467						
Date 11.1.1994		Start time: 16:00		Surveyor name: P. H. M. / J. A. B. G. C. E. S.		
Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, state _____						
Bed of river visible? No <input type="checkbox"/> partially <input type="checkbox"/> entirely <input type="checkbox"/> (tick one box)						
Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box) (12)						
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input type="checkbox"/> (tick one box) (10)						
Site surveyed from: left bank <input type="checkbox"/> right bank <input type="checkbox"/> both banks <input checked="" type="checkbox"/> channel <input type="checkbox"/>						
C. PREDOMINANT VALLEY FORM (tick one box only)				D. PREDOMINANT CHANNEL FORM (tick one box only)		
 <input type="checkbox"/> vee  <input type="checkbox"/> concave/bowl  <input type="checkbox"/> stepped valley floor (terraced)  <input checked="" type="checkbox"/> symmetrical  <input type="checkbox"/> asymmetrical  <input type="checkbox"/> gorge				<input type="checkbox"/> predominantly culverted <input type="checkbox"/> open, but bed or banks predominantly artificial (eg bar reinforced) <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input checked="" type="checkbox"/> no obvious modification ('semi-natural')		
E. NAVIGATION (tick one box only)						
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>						
F. PREDOMINANT FLOW TYPE (tick one box only)						
torrential/whitewater <input type="checkbox"/> riffle-pool <input type="checkbox"/> static <input type="checkbox"/> step-pool cascade <input type="checkbox"/> approximately laminar <input checked="" type="checkbox"/> impounded <input type="checkbox"/>						

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK: Bankfull height (m) 0.3, Bank height if different (m) —, Embankment height (m) —

CHANNEL: Bankfull width (m) 1, Water width (m) 0.6, Water depth (m) 0.07

RIGHT BANK: Bankfull height (m) 0.3, Bank height if different (m) —, Embankment height (m) —

Bed material at site is: unconsolidated ☒ chest algal growth compact, stable; unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose; unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: None ☐ Number of Culverts = 1, Weirs = 0, Bridges = 3, Outfalls = 1

RECENT MANAGEMENT: Banks: None ☐ Revegetation ☒ Bank-mowing ☐ Enhancement ☐ Channel: None ☐ Dredging ☒ Wood-cutting ☐ Enhancement works ☒ Silt ☐

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NOISANCE PLANT SPECIES: Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

SPRINTING: SPURTING, BECK, ADJACENT TO LAMINAR FLOW, RAPIDS, REVEGETATION, BUT IN SOLUTION OF ROCK, SPECIAL FEATURES, etc.

RIVER TYPE: Number (1-14) ☐ None of them ☒

TIME TAKEN: 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-35-5711

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 2: BACKGROUND INFORMATION

Altitude(m) —, Slope —, Mean Annual Flow category (1-10) —

Solid geology —, Drift geology —, Planform category —

FIELD SURVEY DETAILS: Site number: 257, River: WYRE, Grid Reference: 5515546, Date: 1.2.1994, Start time: 11.30, Surveyor name: P. J. Smith, B. J. Hill, Are conditions affecting survey? No ☒ Yes ☐ If yes, state: (tick one box) (1)

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (1)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (2)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM: vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM: predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION: Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: torrential/whitewater ☐ step-pool cascade ☐ riffle-pool ☐ approximately laminar ☒ static ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 3: SPOT CHECKS

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES: Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

LEFT BANK: Predominant bank material (one every only) SC, RR, ER, GA, SA, SA, SA, SA, SW, SA; bank modification (one every only) RS, RS, RS, RS, RS, RS, RS, RS, RS, RS; bank feature(s) NO, NO, NO, NO, NO, NO, NO, NO, NO, NO

CHANNEL: Predominant channel substrate (one every only) PR, CO, CO, CO, SP, SP, SP, CO, CO, CO; Predominant flow type (one every only) TW, AL, AL, AL, AL, AL, AL, AL, AL, AL; channel modification(s) QA, NO, NO, NO, NO, NO, NO, NO, NO, NO; channel feature(s) NO, NO, NO, NO, NO, NO, NO, NO, NO, NO

RIGHT BANK: Predominant bank material (one every only) SA, SA, SA, SA, SA, SA, SA, SA, SA, SA; bank modification (one every only) RS, RS, RS, RS, RS, RS, RS, RS, RS, RS; bank feature(s) NO, NO, NO, NO, NO, NO, NO, NO, NO, NO

VEGETATION STRUCTURE: B = bare, U = uniform, S = simple, C = complex. Refer to spot-check key.

LEFT RIPARIAN ZONE (if none, enter NO): NO, NO, NO, NO, NO, NO, NO, NO, NO, NO

LEFT BANK: S, S, S, S, S, S, S, S, S, S

RIGHT BANK: S, S, S, S, S, S, S, S, S, S

RIGHT RIPARIAN ZONE (if none, enter NO): S, S, S, S, S, S, S, S, S, S

CHANNEL VEGETATION TYPES (if a different bank tick one only, use B (0-33% bare), U (uniform), S (simple), C (complex))

NONE (tick as appropriate)

Liverworts/mosses ☒

Emergent herbs ☒

Emergent reeds/bushes ☒

Flowering-leaved ☒

Free-floating ☒

Arise/bottom ☒

Submerged ☒

Filamentous algae ☒

Use end column for overall assessment over 500m (use B or A)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SECTION 4: LAND USE WITHIN 500m OF RIVER

ENTER SITE NUMBER: 257

LAND USE WITHIN 500m OF RIVER (tick one box per bank, use B (0-33% bare), U (uniform), S (simple), C (complex))

LEFT BANK: Broadleaf/deciduous woodland ☐ Coniferous plantation ☐ Moorland/heath ☐ Scrub/rough pasture ☐ Bog, marsh, fen ☐ Improved/semi-improved grass ☐ Tilled land ☐ Suburban/urban development ☒

RIGHT BANK: Broadleaf/deciduous woodland ☐ Coniferous plantation ☐ Moorland/heath ☐ Scrub/rough pasture ☐ Bog, marsh, fen ☐ Improved/semi-improved grass ☐ Tilled land ☐ Suburban/urban development ☒

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per bank, use B (0-33% bare), U (uniform), S (simple), C (complex))

LEFT BANK: None ☒ Banklength % = —

RIGHT BANK: None ☐ Banklength % = 70

BANK PROFILES WITHIN 500m OF SITE (tick one box per bank, use B (0-33% bare), U (uniform), S (simple), C (complex))

Natural/unmodified: Vertical/undercut ☒ Vertical + toe ☒ Steep (> 45°) ☒ Gentle ☒ Composite ☒

Artificial/unmodified: Reconciled ☐ Reinforced - whole bank ☐ Reinforced - top only ☐ Reinforced - toe only ☐ Artificial two-stage ☐ Pooled ☐

VEGETATION: Left bank: None ☒ Banklength % = —

RIGHT BANK: None ☐ Banklength % = 70

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

TREES (tick one box per bank): None ☐ Isolated/scattered ☒ Regularity spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES (tick one box per feature): Shading of channel ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

NATURAL CHANNEL FEATURES (tick one box per bank, use B (0-33% bare), U (uniform), S (simple), C (complex))

Number of riffles: 2, Pools: 1

Tick one box per feature: Waterfall/cascade ☐ Torrential flow (rapids) ☐ Laminar flow (run/glide) ☐ Static flow (slack) ☐ Exposed bedrock ☐ Exposed boulders ☐

Unvegetated Point Bars: None ☐ Present ☐

Unvegetated mid-channel bars: None ☐ Present ☐

Vegetated mid-channel bars: None ☐ Present ☐

Mature island(s): None ☐ Present ☐

Unvegetated side bar: None ☐ Present ☐

Vegetated side bar: None ☐ Present ☐

Artificial: None ☐ Present ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

A. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) <u>1.90</u>	Bankfull width (m) <u>23.0</u>	Bankfull height (m) <u>1.90</u>
Bank height if different (m) <u>-</u>	Water width (m) <u>32.0</u>	Bank height if different (m) <u>-</u>
Embanked height (m) <u>-</u>	Water depth (m) <u>0.25</u>	Embanked height (m) <u>-</u>

Bed material at site is: consolidated ☒ chem. silt growth compact, stable
 unconsolidated ☐ chem. fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

B. EVIDENCE OF RECENT MANAGEMENT (check all that apply)

None	Number of	Cutovers	Weirs	Bridges	Outfalls
<input checked="" type="checkbox"/>					

C. CHANNEL CHANGES (check all that apply)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

D. NOTABLE FLORA AND FAUNA (check all that apply)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

E. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 2 None of them ☐

F. TIME TAKEN (in minutes) 85 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1UR
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 259 River: WHARFE Mid-section grid reference if different from designated site: _____
 Grid Reference: SE 473 757
 Date: 17.12.1994 Start time: 11:15 Surveyor name: PAUL HEWITT

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☒

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ intermittent/whitewater ☐ riffle pool ☐ pool ☐ step pool/cascade ☐ approximately laminar ☒ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (see entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (see entry only)	GE	GE	GE	GE	GE	GE	GE	GE	GE	GE
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only (U = bare, S = slope, C = complex. Refer to spot-check key)

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (to be assessed over a 10m wide stretch with one entry only (U = bare, S = slope, C = complex. Refer to spot-check key)

None (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent reeds/bushes										
Emergent herbs										
Emergent reeds/bushes										
Emergent herbs										
Emergent reeds/bushes										
Emergent herbs										

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J. LAND USE WITHIN 50m OF RIVER (Use E (ca 33% banklength) or J (if present))

	L	R	E	J
Broadleaved woodland				
Coniferous plantation				
Moorland/heath				
Scrub/rough pasture				
Suburban/urban development				

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

L. BANK PROFILES WITHIN 500m (Use E (ca 33% banklength) or J (if present))

	L	R	E	J
Natural/unmodified				
Vertical undercut				
Vertical + toe				
Step (> 45°)				
Gravels				
Composite				
Artificial/modified				
Recessed				
Reinforced - whole bank				
Reinforced - top only				
Reinforced - toe only				
Artificial in-situ				
Peached				

M. EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfalls/cascades				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Stable flow (slack)				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Unvegetated side bar				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant flow type (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT RIPARIAN ZONE (if none, enter NO)										
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)										

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% area) or U (percent))

	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

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ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or U (percent)

	L	R		L	R
Grassland/mailed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/rural development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if percent))

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

L. BANK PROFILES WITHIN 50m Use E (≥ 33% banklength) or U (percent)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite		Artificial to toe/slope			
			Peached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength (if percent))

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E (≥ 33%)	None	Percent E
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (Tick one box per feature)

	None	Percent E
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Under-ster tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapid)				
Laminar flow (pool/slide)				
Static flow (slack)				

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P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	3.70	Bankfull height (m)
Bank height if different (m)	4.20	Bank height if different (m)
Embankment height (m)		Embankment height (m)
	Water width (m)	0.70
	Water depth (m)	

Bed material at site is: consolidated ☐ clay: silt growth compact, stable
unconsolidated ☒ clay: fresh clean gravel, easily displaced, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES. Use tally method, then total tick "none" where appropriate

None ☐ Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Revetting <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wood-culling <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

T. CHOSED CHANNEL (tick one box only)

Is 33% or more of the channel over 50m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (under 100 characters)

W. SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, incidental sightings)

X. RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☒

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A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

B. FIELD SURVEY DETAILS. Complete all questions

Site number: 260 River: F447 Mid-section grid reference if different from designated site: SE 64443

Date: 17/5/1994 Sun time: 1645 Surveyor name: PAUL HENVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

horizontal flow ☐ vertical flow ☐ turbulent flow ☐ laminar flow ☐ pool ☐ riffle ☐ rapid ☐ waterfall ☐ cascade ☐ static flow ☐ other ☐

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.0	Bank full width (m)
Bank height at different (m)	1.75	Water width (m)
Bank height at different (m)	1.75	Water depth (m)
Bank height at different (m)	1.75	Bank height at different (m)
Bank height at different (m)	1.75	Bank height at different (m)

Bed material at site is: consolidated ☐ chert silt/clay compact, stable
unconsolidated ☒ chert fresh clean gravel, easily dislodged, loose
unknown ☐ invertebrate or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only method, then total; tick none, when appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 2 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Current signs tick boxes)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Reclaiming	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-couping	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

CHOKED CHANNEL (Is 33% or more of the channel over 500m choked with vegetation?) NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Outline if spot checks representative of site as a whole)

SPECIAL FEATURES (If present, describe features of high interest, including location)

RIVER TYPE (If present, describe features of high interest, including location)

Number (1-14) ☒ None of them ☐

TIME TAKEN

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Planform category
Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 261 River: River Severn MID-section grid reference if different from designated site:
Grid Reference: S6655446
Date: 19.4.1994 Start time: 1605 Surveyor name: PAUL HENNIGS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0

CLANNE VEGETATION TYPES (tick one box per feature)

NONE (tick as appropriate)

Emergent herbs

Emergent reeds/sedges

Flowering-leaved

Free-floating

Acrophilous

Submerged

Filamentous algae

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ENTER SITE NUMBER 2

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

	L	R		L	R
Broadleaf/woodland			Bag. marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/brough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (tick one box per feature)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut			Reclaimed		
Vertical + toe			Reinforced - whole bank		
Step (>45°)			Reinforced - top only		
Grate			Reinforced - toe only		
Composites			Artificial two-stage		
			Pierced		

EMBANKMENTS (tick none, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	E > 10%	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (tick one box per feature)

Shading of channel

Overhanging boughs

Exposed bankside roots

Underwater tree roots

Fallen trees

Woody debris

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of: Riffles = 0 Pools = 0 Unvegetated Point Bars = 0 Vegetated Point Bars = 0

Waterfall/cascade

Torrential flow (rapid)

Laminar flow (slow/glide)

Static flow (stagnant)

Exposed bedrock

Exposed boulders

Unvegetated mid-channel bars

Vegetated mid-channel bars

Mature island(s)

Unvegetated side bar

Vegetated side bar

Artificial

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SWEEP-UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 50m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed across 100m of site)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

VEGETATION TYPES (tick in relevant boxes - tick one entry only B = bare U = uniform S = simple C = complex)

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick E or A)

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SWEEP-UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 50m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed across 100m of site)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

VEGETATION TYPES (tick in relevant boxes - tick one entry only B = bare U = uniform S = simple C = complex)

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick E or A)

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SWEEP-UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 50m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed across 100m of site)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

VEGETATION TYPES (tick in relevant boxes - tick one entry only B = bare U = uniform S = simple C = complex)

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick E or A)

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SWEEP-UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 50m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed across 100m of site)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

VEGETATION TYPES (tick in relevant boxes - tick one entry only B = bare U = uniform S = simple C = complex)

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

PAUSE CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 2.0	Bank full width (m) 6.30	Bank full height (m) 2.0
Bank height if different (m) 2.0	Water width (m) 2.30	Bank height if different (m) 1.80
Embank height (m) 0.00	Water depth (m) 0.20	Embank height (m) 1.80

Bed material at site is: consolidated ☐ chest: slight growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ loose/cobble or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q10. TRIBUTARIES (Use site map only)

Significant tributary within 500m length? No ☒ Yes ☐

Q11. NUMBER OF ARTIFICIAL FEATURES (Use site map only)

None ☒ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (confirm sign, tick below)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/>

Q12. CHOSEN CHANNEL FORM (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

Q13. NOTABLE NUISANCE PLANT SPECIES (tick below - No need to estimate as percentage)

Glenn Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

Q14. BRIEF DESCRIPTIVE SENTENCE (Use site map only)

Q15. REASONED LONG TERM ADO ENHANCEMENT WITHIN 500m BANK TOP (of data table, if possible)

Q16. SPECIAL FEATURES (Use site map only)

Q17. RIVER TYPING (Use site map only)

Number (1-14) ☒ Name of them ☐

TIME TAKEN ☒ 4.5 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAYEN 7-16-4141; ANDREW BROOKES 7-25-5712.

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SECTION 2: BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source (km) _____

SECTION 3: FIELD SURVEY DETAILS (Complete all questions)

Site number: 263 River: BLYTH Stream: Mid-section grid reference if different from designated site: _____
Grid Reference: SE 94 467
Date: 17.5.1994 Start time: 12.0 Surveyor name: PAUL HEWILL
Are conditions affecting survey? No ☐ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

SECTION 4: PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

SECTION 5: PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

SECTION 6: NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

SECTION 7: PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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SECTION 8: TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

SECTION 9: PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
- channel modification(s)	RS	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	JS	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

SECTION 10: VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	S	S	S	S	U	NO
LEFT BANK	S	U	U	U	U	U	U	U	S	S
RIGHT BANK	S	U	U	U	U	U	U	U	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

SECTION 11: CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only - tick one box only)

NONE (tick all appropriate)

Liverworts/mosses	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent herbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent reeds/sedges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating-leaved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frae-flowering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amphibious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Submerged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filamentous algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Use end column for overall assessment after 500m (tick one box only)

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SECTION 12: SWEET-UP OVER 500m

ENTER SITE NUMBER 263

SECTION 13: LAND USE WITHIN 50m OF RIVER (Use 2 x 33% banklength or 1/3 per cent)

	L	R		L	R
Broadleaf/deciduous woodland	<input type="checkbox"/>	<input type="checkbox"/>	Bag, marsh, fen	<input type="checkbox"/>	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	<input type="checkbox"/>	Improved/semi-improved grass	<input type="checkbox"/>	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	<input type="checkbox"/>	Tilled land	<input type="checkbox"/>	<input type="checkbox"/>
Scrub/rough pasture	<input type="checkbox"/>	<input type="checkbox"/>	Suburban/urban development	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 14: LINEAR EXTENT OF RIPARIAN ZONE (tick none, none, or estimate percentage banklength if present)

Left bank None ☐ Banklength % = _____ Right bank None ☐ Banklength % = _____

SECTION 15: BANK PROFILES WITHIN 500m (Use 2 x 33% banklength or 1/3 per cent)

	L	R		L	R
Natural/unmodified	<input type="checkbox"/>	<input type="checkbox"/>	Artificial/modified	<input type="checkbox"/>	<input type="checkbox"/>
Vertical/undercut	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced	<input type="checkbox"/>	<input type="checkbox"/>
Vertical + toe	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - whole bank	<input type="checkbox"/>	<input type="checkbox"/>
Step (> 45°)	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - top only	<input type="checkbox"/>	<input type="checkbox"/>
Gully	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>	<input type="checkbox"/>
Composite	<input type="checkbox"/>	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	Poached	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 16: BANKS/ENTRANCES (tick none, none, or estimate percentage banklength if present)

Left bank None ☐ Banklength % = _____ Right bank None ☐ Banklength % = _____

SECTION 17: EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	ASSOCIATED FEATURES	None	Present	B
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 18: NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	KS	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	KS	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION STRUCTURE (to be assessed over a 10m wide zone; fill in each box only once every 50m)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (to be assessed over a 10m wide zone; fill in each box only once every 50m)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/beds										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

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ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (use E (ca 33% banklength) or A (ca 33% banklength) or P (ca 33% banklength))

	L	R		L	R
Bracken/unimproved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/unimproved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (use E (ca 33% banklength) or A (ca 33% banklength) or P (ca 33% banklength))

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Revetted		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Grade			Reinforced - toe only		
Composite			Artificial two-stage		
			Revetted		

EMBANKMENTS (tick none, box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right	E > 33%	None	Present E
None					
Isolated/scattered					
Rapidly spread, single					
Occasional change					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Present E
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Understorey tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present E	Unvegetated Point Bars	Vegetated Point Bars
Number of riffles				
Waterfall/massade				
Terraced flow (rapid)				
Laminar flow (run/glide)				
Stale flow (dick)				
Exposed bedrock				
Exposed boulders				

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CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight channel section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.50	Bankfull width (m)	3.60
Bank height if different (m)	1.0	Water width (m)	3.50
Bank height if different (m)	1.0	Bank height if different (m)	0.50
Embankment height (m)		Water depth (m)	0.05
Bank material at site is:			
consolidated	<input type="checkbox"/>	clear: algal growth compact, stable	
unconsolidated	<input checked="" type="checkbox"/>	clear: fresh clean gravel, easily dislodged, loose	
unknown	<input type="checkbox"/>	inaccessible or not visible (eg turbid water)	

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

QUANTITATIVE TRIBUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick none - where appropriate)

	None	Number of	Culverts	Weirs	Bridges	Outfalls
None					2	2

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

	L	R	CHANNEL
None			
Revetting			
Bank-mowing			
Enhancement			

CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

UNDESIRABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

WOODEN FENCE (tick one box per feature)

WOODEN FENCE WITH ALTERNATIVE MATERIAL (tick one box per feature)

WOODEN FENCE WITH ALTERNATIVE MATERIAL (tick one box per feature)

WOODEN FENCE WITH ALTERNATIVE MATERIAL (tick one box per feature)

SPECIAL FEATURES (tick one box per feature)

RIPARIAN ZONE (tick one box per feature)

RIVER TYPING (tick one box per feature)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box per feature)

50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1UE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 264 River name: RIVER MOUTH Grid Reference: 649473 Tick one box

Date: 17/5/1994 Start time: 16:20 Surveyor name: PAUL HEWITT

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box per feature)

	Yes	No
concave/bowl		
stepped valley floor (terraced)		
symmetrical		
asymmetrical		
gorge		

PREDOMINANT CHANNEL FORM (tick one box per feature)

	Yes	No
predominantly culverted		
open, but bed or banks predominantly artificial (eg box reinforced)		
open, little or no obvious reinforcement, but resectioned and/or realigned		
open, but predominantly artificially dug (eg mill race, dyke)		
not artificial, but dammed		
no obvious modification ('semi-natural')		

NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

	Yes	No
torrential/whitewater		
step-pool cascade		
rifle-pool		
static		
approximately laminar		
impounded		

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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably above a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	3.5	Bank full width (m)	5.10	Bank full height (m)	3.5
Bank height if different (m)	6.0	Water width (m)	4.70	Bank height if different (m)	1.0
Embarked height (m)		Water depth (m)	1.45	Embarked height (m)	

Bed material at site is: consolidated ☐ clay: algal growth compact, stable
 unconsolidated ☒ clay: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBERS OF ARTIFICIAL FEATURES (Use GUY method, then total, tick none where appropriate)

Nose ☐ Number of Culverts = 0 Weirs = 1 Bridges = 2 Outfalls = 4

EVIDENCE OF RECENT MANAGEMENT (Channel, bank, riparian vegetation, tick none where appropriate)

BANKS		CHANNEL	
Nose	<input type="checkbox"/>	Nose	<input type="checkbox"/>
Revetting	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input checked="" type="checkbox"/>	Enhancement works	<input type="checkbox"/>

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

GLANT HEDGEWOOD ☐ HIMALAYAN BILIMBA ☐ JAPANESE KNOTWEED ☐

BRIEF DESCRIPTIVE SENTENCE (Summarize if you think representative of site, or a warning)

Stream running through village, mostly on both sides with river fragments associated

SPECIAL FEATURES (tick one box, recent habitat of high interest, incidental sightings)

None (1-14) ☐ None of them ☐

TIME TAKEN (tick one box)

4.5 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 104 NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HR. TEL/FAX NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Mean Annual Flow category (1-10)
 Solid geology Drift geology Planform category
 Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 265 River name: TAPSCOTT Mid-section grid reference if different from designated site:
 Date: 15/1/1994 Start time: 17:00 Surveyor name: Peter Fox / Gillian (200)
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box) 1

Photograph: general character? No ☐ Yes ☒ (tick one box) 6

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 13

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

- *Phragmites communis*, *Carex polytricha*
Typha latifolia, *Eleocharis acicularis*

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TEN SPOT CHECKS (at 50m intervals)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

GEOPHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
Predominant bank material (one entry only)	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS
Bank modification (one entry only)	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO
CHANNEL	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant channel substrate (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
Predominant flow type (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
Channel modification(s)	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO
RIGHT BANK	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant bank material (one entry only)	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS
Bank modification (one entry only)	LO	LO	LO	LO	LO	LO	LO	LO	LO	LO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPE (fill in relevant boxes; tick one box per feature)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent beds										
Emergent reeds/bushes - <i>Phragmites</i>										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use U or S)

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ENTER SITE NUMBER 265

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

	L	R	L
Broadleaved woodland			
Coniferous plantation			
Woodland/heath			
Scrub/rough pasture			
Improved/semi-improved grass			
Tilled land			
Suburban/urban development			

LINEAR EXTENT OF RIPARIAN ZONES (tick one box per feature)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m (Use G (at 33% banklength) or 7 (if present))

	L	R	L
Natural/unmodified			
Vertical undercut			
Vertical face			
Slope (> 45°)			
Gentle			
Composite			
Artificial/unmodified			
Revetting			
Reinforced - whole bank			
Reinforced - top only			
Reinforced - toe only			
Artificial two-rings			
Paved			

PERCENTAGE OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)

	Left	Right	% ≥ 33%	None	Present
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clump					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pool and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None				
Waterfall/cascade				
Torrential flow (rapid)				
Laminar flow (run/glide)				
Stale flow (back)				
Exposed bedrock				
Exposed boulders				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Marsh island(s)				
Unvegetated side bar				
Vegetated side bar				
Artificial				

29 April 1994 40° 20' N 104° 10' W RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m² spots)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	FA	EA	FA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	R1	R2	R3	R4	R5	R3	R3	R3	R3	R3
- bank feature(s)	W	W	W	W	W	W	W	W	W	W
CHANNEL										
Predominant channel substrate (one entry only)	SP	SP	SP	SE	SE	SP	SP	SE	SE	SP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	R1	R2	R3	R3	R3	R3	R3	R3	R3	R3
- channel feature(s)	W	W	W	W	W	W	W	W	W	W
RIGHT BANK										
Predominant bank material (one entry only)	EA	FA	CA	CA	FA	EA	FA	EA	EA	E
- bank modification (one entry only)	R1	R2	R3	R3	R3	R3	R3	R3	R3	R3
- bank feature(s)	W	W	W	W	W	W	W	W	W	W
H. VEGETATION STRUCTURE (to be assessed over a 10m wide transect). Fill in each box with one entry only										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	U	N	N	N	N	U	U	U	U	U
LEFT BANK	U	U	U	S	S	U	U	U	S	S
RIGHT BANK	U	S	U	C	C	S	S	U	U	
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	U	E	N	N	N	N	N	N
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (2-33% area) or G (green))										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges <i>Phalaris</i>	E	F	✓	✓	✓	✓	✓	✓	✓	✓
Flamingo-leaved <i>Caldwellia</i> sp.	F	✓	✓	✓	✓	✓	✓	✓	✓	✓
Free-floating										
Amphibious										
Submerged										
Filamentous algae	✓	✓	✓	✓	✓	E	F	✓	✓	E

Use end column for overall assessment over 500m (use E or S)

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WATERFALL/SWEEP UP OVER 500m ☐ ☒ ENTER SITE NUMBER 7

15% LAND USE WITHIN 50m OF RIVER - Use E ($\geq 33\%$ banklength) or U (percent of riparian zone)

	L	R		L
Broadleaf/unseed woodland		<input checked="" type="checkbox"/>	Dog, marsh, fen	
Coniferous plantation			Improved/seed improved grass	
Moorland/heath			Unseeded/seed	E
Scrub/bush pasture			Suburban/urban development	

25% LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength U percent)

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 44

15% BANK PROFILES WITHIN 500m Use E ($\geq 33\%$ banklength) or U (percent of riparian zone)

Natural/unmodified	L	R	Artificial/modified	L
Vertical/handcut	<input checked="" type="checkbox"/>		Retained	E
Vertical + toe	<input checked="" type="checkbox"/>		Reinforced - whole bank	
Slope (> 45°)	<input checked="" type="checkbox"/>		Reinforced - top only	
Grass	<input checked="" type="checkbox"/>		Reinforced - toe only	
Composite	<input checked="" type="checkbox"/>		Artificial two-stage	
			Poached	

15% EMBANKMENTS (tick 'none' box or estimate percentage banklength U percent)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

15% EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (Tick one box per feature)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Percent	E
None	<input type="checkbox"/>	<input type="checkbox"/>	E $\geq 33\%$	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Occasional clumps	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Exposed bank side roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Scrub-co-spatious	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

0% NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles = 6 Pools = 1 Unvegetated Point Bars = 0 Vegetated Point Bars = 1	Tick one box per feature	None	Percent	E
Waterfall/escarpment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Torrential flow (rapid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Laminar flow (run/slide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Static flow (slack)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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2.2 CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	5.6	Bankfull width (m)	18	Bankfull height (m)	0.6
Bank height if different (m)	1.5	Water width (m)	16	Bank height if different (m)	0.75
Embankment height (m)	3.0	Water depth (m)	1.5?	Embankment height (m)	3.0

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ lacustrine or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

3. TRIBUTARIES. (tick one box only) ☒ Yes ☐ No

Significant tributary within 500m length? ☒ No ☐ Yes

4. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total tick none where appropriate

None <input checked="" type="checkbox"/>	Number of	Culverts	Weirs	Bridges	Outfalls
SOME EVIDENCE OF RECENT MANAGEMENT? (tick one box only)					

BANKS	L	R	CHANNEL	
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None <input checked="" type="checkbox"/>	
Reseeding	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>
State				

5. CHOICE OF CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

6. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance

Giant Hogweed <input type="checkbox"/>	Himalaya Balsam <input type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>
--	--	--

7. BRIEF DESCRIPTIVE SENTENCE (Indicate if your channel representative of site as a whole)

Large slow flowing river with occasional channels/banks channel embanked on both banks. Inactive.

8. SPECIAL FEATURES (e.g. steep, exposed banks of high banks, individual algal, or other bank/valley, many floodplains of river 2m wide, no base of embankment)

9. RIVER TYPING Refer to photographs of river types and indicate which streamlet the site is

Number (1-14) ☒ None of them ☐

10. TIME TAKEN 90 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
 TELPHONE NUMBERS: PETER FOX 7-11-2140; PAUL RAYNOL 7-10-4343; ANDREW BROOKES 7-25-3711

29 April 1994

RIVER HABITAT SURVEY: 1994 VERIFICATION

Page 1

BACKGROUND INFORMATION - This information is being collected separately.

Altitude(m)	Slope	Mean Annual Flow category (1-10)
Local geology	Drift geology	Planform category
Distance from source(km)		

FIELD SURVEY DETAILS - Complete all questions.

Site number: **266** River **Stratton** Mid-section grid reference if different from designated site:

Grid Reference: **TN-145-446 D-1K**

Date **19.12.1994** Start time: **5:55** Surveyor name: **Peter Hutton / Peter Gull**



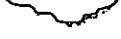
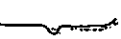


Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) **30**

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) **29**

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)	D. PREDOMINANT CHANNEL FORM (tick one box only)
 <input type="checkbox"/> vee  <input type="checkbox"/> concave/bowl  <input type="checkbox"/> stepped valley floor (terraced)  <input checked="" type="checkbox"/> symmetrical  <input type="checkbox"/> asymmetrical  <input type="checkbox"/> gorge	<input type="checkbox"/> predominantly culverted <input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced) <input checked="" type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input type="checkbox"/> no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater <input type="checkbox"/>	riffle-pool <input type="checkbox"/>	static <input type="checkbox"/>
step-pool cascade <input type="checkbox"/>	approximately laminar <input checked="" type="checkbox"/>	impounded <input type="checkbox"/>

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CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
0.5	2.70	0.5
Bank height if different (m)	Water width (m)	Bank height if different (m)
3.50	1.90	3
Embarked height (m)	Water depth (m)	Embarked height (m)
	0.25	

Bed material at site is: consolidated ☒ chest silt/growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use tally method; then total; tick, none, where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT: Obvious signs (see box) ☐

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Recessioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-erosion	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

IS A CHOKED CHANNEL? ☐

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (under 100 characters; representative of site area)

Channel dominated by dense riparian vegetation on both sides. The channel is a small, fast-flowing stream with a rocky bed. The surrounding landscape is a mix of open fields and woodland.

SPECIAL FEATURES (eg obvious, adjacent habitats of high interest; incidental sightings)

RIVER TYPE (refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

TIME TAKEN ☒ 65 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4340; ANDREW BROOKES 7-15-5112

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BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 274 River Mid-section grid reference if different from Grid Reference: 55057351 & 864 designated site:

Date 1.1.1994 Start time: 9.00 Surveyor name: J. H. S. 18.11.1994

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 17

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 18

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☒ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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SPOT CHECKS (at 50m intervals)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
bank modification (see entry only)	W	W	W	W	W	W	W	W	W	W
bank feature(s)	W	W	W	W	W	W	W	W	W	W
CHANNEL										
Predominant channel substrate (see entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (see entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
channel modification(s)	W	W	W	W	W	W	W	W	W	W
channel feature(s)	W	W	W	W	W	W	W	W	W	W
RIGHT BANK										
Predominant bank material (see entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
bank modification (see entry only)	W	W	W	W	W	W	W	W	W	W
bank feature(s)	W	W	W	W	W	W	W	W	W	W

VEGETATION STRUCTURE (to be assessed over a 10m wide section; fill in each box with one entry only)

B = bare U = uniform S = slope C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	W	W	W	W	W	W	W	W	W	W
RIGHT BANK	W	W	W	W	W	W	W	W	W	W
RIGHT RIPARIAN ZONE (if none, enter NO)	W	W	W	W	W	W	W	W	W	W

CHANNEL VEGETATION TYPES (tick in relevant boxes with one entry; tick NO if none present)

NONE (tick as appropriate)

Emergent/monoculture ☒

Emergent herbs ☒

Emergent reeds/bulrushes ☒

Floating-leaved ☒

Free-floating ☒

Amphibious ☒

Submerged ☒

Filamentous algae ☒

Use end column for overall assessment over 500m (see E or J)

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ENTER SITE NUMBER 274

LAND USE WITHIN 50m OF RIVER (tick one box per 50m length; if present)

	L	R		L
Broadleaved woodland			Bag, marsh, fen	<input checked="" type="checkbox"/>
Coniferous plantation			Improved/semi-improved grass	<input checked="" type="checkbox"/>
Moorland/heath			Tilled land	<input type="checkbox"/>
Scrub/heath pasture			Suburban/urban development	<input type="checkbox"/>

LINEAR EXTENT OF RIPARIAN ZONE (tick none, bar or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

BANK PROFILES WITHIN 500m (tick one box per 50m length; if present)

	L	R		L
Natural/unmodified			Artificial/modified	
Vertical/moderated	<input checked="" type="checkbox"/>		Recession-d	<input checked="" type="checkbox"/>
Vertical + toe	<input checked="" type="checkbox"/>		Reinforced - whole bank	<input checked="" type="checkbox"/>
Steep (> 45°)	<input checked="" type="checkbox"/>		Reinforced - top only	<input type="checkbox"/>
Grass	<input checked="" type="checkbox"/>		Reinforced - toe only	<input type="checkbox"/>
Composite	<input checked="" type="checkbox"/>		Artificial two-stage	<input type="checkbox"/>
			Poached	<input checked="" type="checkbox"/>

END BANKMENTS (tick none, bar or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right	ASSOCIATED FEATURES (tick one box per feature)	None	Present B
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature				
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

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SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

1.1 CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.20	Bank full width (m) 1.50	Bank full height (m) 0.20
Bank height if different (m) -	Water width (m) 0.90	Bank height if different (m) -
Embarked height (m) 0.60	Water depth (m) 0.15	Embarked height (m) 1.70

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

SECTION 2: TRIBUTARIES

Significant tributary within 500m length? No ☐ Yes ☐

SECTION 3: NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)

None ☐ Number of Culverts = 2 Weirs = Bridges = Outfalls =

SECTION 4: EVIDENCE OF RECENT MANAGEMENT (Other than sign; tick 'none' where appropriate)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-sowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

SECTION 5: CHOKED CHANNELS

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

SECTION 6: NOTABLE NUISANCE PLANT SPECIES (tick 'none' where appropriate)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

SECTION 7: BRIEF DESCRIPTIVE SENTENCE (Indicate if the channel is a natural or artificial feature)

Channel is a natural feature, but has been resectioned and dredged.

SECTION 8: SPECIAL FEATURES (tick 'none' where appropriate)

None

SECTION 9: RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 15 None of them ☐

SECTION 10: TYPING TAKEN (tick 'none' where appropriate)

55m

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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SECTION 1: BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

SECTION 2: FIELD SURVEY DETAILS (Complete all questions)

Site number: 275 River: Great Ouse Mid-section grid reference if different from Grid Reference: ST4552 684

Date: 11/5/1994 Start time: 0.30 Surveyor name: Peter Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 19

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 20

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

SECTION 3: PREDOMINANT VALLEY FORM (tick one box only)

yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

SECTION 4: PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☒ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

SECTION 5: NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

SECTION 6: PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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SECTION 1: LAND USE WITHIN 500m OF RIVER (tick 'none' where appropriate)

Land Use	L	R
Broadleaf/woodland	<input type="checkbox"/>	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	<input type="checkbox"/>
Scrub/rough pasture	<input type="checkbox"/>	<input type="checkbox"/>
Suburban/urban development	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 2: LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' where appropriate)

Left bank None ☐ Bank length = 60 Right bank None ☐ Bank length = 70

SECTION 3: BANK PROFILES WITHIN 500m (tick 'none' where appropriate)

Bank Profile	L	R
Natural/unmodified	<input type="checkbox"/>	<input type="checkbox"/>
Artificial/unmodified	<input type="checkbox"/>	<input type="checkbox"/>
Reinforced	<input type="checkbox"/>	<input type="checkbox"/>
Reinforced - whole bank	<input type="checkbox"/>	<input type="checkbox"/>
Reinforced - top only	<input type="checkbox"/>	<input type="checkbox"/>
Reinforced - toe only	<input type="checkbox"/>	<input type="checkbox"/>
Artificial toe-stage	<input type="checkbox"/>	<input type="checkbox"/>
Poached	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 4: ENBANKMENTS (tick 'none' where appropriate)

Left bank None ☒ Bank length = Right bank None ☒ Bank length =

SECTION 5: EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

Tree Type	Left	Right
None	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>
Scrub-continuous	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>

ASSOCIATED FEATURES (tick one box per feature)

Feature	None	Present
Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Understorey tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SECTION 6: NATURAL CHANNEL FEATURES (tick 'none' where appropriate)

Feature	None	Present
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (back)	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>

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SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

1.1 CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 1.40	Bank full width (m) 5.10	Bank full height (m) 1.70
Bank height if different (m) 2.65	Water width (m) 2.00	Bank height if different (m) 2.65
Embarked height (m) -	Water depth (m) 0.15	Embarked height (m) -

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

SECTION 2: TRIBUTARIES

Significant tributary within 500m length? No ☐ Yes ☐

SECTION 3: NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)

None ☐ Number of Culverts = 1 Weirs = 3 Bridges = Outfalls =

SECTION 4: EVIDENCE OF RECENT MANAGEMENT (Other than sign; tick 'none' where appropriate)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-sowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

SECTION 5: CHOKED CHANNELS

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

SECTION 6: NOTABLE NUISANCE PLANT SPECIES (tick 'none' where appropriate)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

SECTION 7: BRIEF DESCRIPTIVE SENTENCE (Indicate if the channel is a natural or artificial feature)

Bank is a natural feature, but has been reinforced by Japanese Knotweed.

SECTION 8: SPECIAL FEATURES (tick 'none' where appropriate)

None

SECTION 9: RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 15 None of them ☐

SECTION 10: TYPING TAKEN (tick 'none' where appropriate)

50m

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 5m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GR	GR	GR	BR	BR	BR	BR	BR	BR	BR
- bank modification (one entry only)	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CO	CO	CO	SS	SS	SS	SS	SS	SS	SS
Predominant flow type (one entry only)	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
RIGHT BANK										
Predominant bank material (one entry only)	GR	GR	GR	GR	GR	GR	GR	GR	GR	GR
- bank modification (one entry only)	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) (Fill in each box with one entry only)										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	U	BS	S	BS	U	N	U	U	U
LEFT BANK	B	B	U	U	S	B	B	B	B	B
RIGHT BANK	B	U	U	U	S	B	B	B	B	B
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	U	U	BS	S	S	U	U	U
CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (20-30% area) or U (percentage))										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Angiosperms										
Submerged										
Filamentous algae	E	✓	✓	✓	✓	E	✓			
Use end column for overall assessment over 500m (use E or U)										

R2 11/1

[Handwritten signature]

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SWEEP UP OVER 500m (tick one box)

ENTER SITE NUMBER 27

LAND USE WITHIN 500m OF RIVER (tick one box)

Bracken/Unimproved woodland	<input checked="" type="checkbox"/>	Box, marsh, fen	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	Improved/semi-improved grass	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	Tilled land	<input type="checkbox"/>
Scrub/heath pasture	<input checked="" type="checkbox"/>	Suburban/urban development	<input checked="" type="checkbox"/>

LINEAR EXTENT OF RIPARIAN ZONE (tick one box)

Left bank None ☐ Banklength % = 00 Right bank None ☐ Banklength % = 00

BANK PROFILES WITHIN 500m OF RIVER (tick one box)

Natural/unmodified	<input checked="" type="checkbox"/>	Artificial/modified	<input type="checkbox"/>
Vertical/woodcut	<input checked="" type="checkbox"/>	Resectioned	<input type="checkbox"/>
Vertical + toe	<input checked="" type="checkbox"/>	Reinforced - whole bank	<input checked="" type="checkbox"/>
Step (>45°)	<input checked="" type="checkbox"/>	Reinforced - top only	<input type="checkbox"/>
Oscilla	<input type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>
Composite	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>
		Poached	<input type="checkbox"/>

EMBANKMENTS (tick one box)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None	<input type="checkbox"/>	Left	<input type="checkbox"/>	Right	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scrub/contaminant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ASSOCIATED FEATURES (tick one box per feature)

None	<input type="checkbox"/>	Present	<input type="checkbox"/>
Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles = 10	<input type="checkbox"/>	Pool = 4	<input type="checkbox"/>	Unvegetated point bar = 1	<input type="checkbox"/>	Vegetated point bar =	<input type="checkbox"/>
Tick one box per feature	<input type="checkbox"/>	None	<input type="checkbox"/>	Present	<input type="checkbox"/>	None	<input type="checkbox"/>
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bar	<input type="checkbox"/>
Torrential flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bar	<input type="checkbox"/>
Laminar flow (pool/slide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

PHYSICAL DIMENSIONS AND INFLUENCES

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at the site:

consolidated	<input type="checkbox"/>	coarse: algal growth compact, stable	<input type="checkbox"/>
unconsolidated	<input type="checkbox"/>	coarse: fresh clean gravel, easily dislodged, loose	<input type="checkbox"/>
unknown	<input type="checkbox"/>	fine: inaccessibility or not visible (eg turbid water)	<input type="checkbox"/>

Location of measurements is:

rifle	<input checked="" type="checkbox"/>	run or glide	<input type="checkbox"/>	other	<input type="checkbox"/>
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TRIBUTARIES (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (tick one box)

None ☐ Number of Culverts = Weirs = Bridges = 2 Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box)

BANKS	<input checked="" type="checkbox"/>	CHANNEL	<input checked="" type="checkbox"/>
None	<input type="checkbox"/>	None	<input type="checkbox"/>
Resectioning	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

THE CHOSEN CHANNEL (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (tick one box)

Substrate mainly large stones/rubble. 20% pool type sequence.

SPECIAL FEATURES (tick one box)

RIVER TYPING (tick one box)

Number (1-14) 11 None of them ☐

TIME TAKEN (tick one box)

60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-12144; PAUL RAVEN 7-10444; ANDREW BROOKES 7-154112.

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 276 River: WYLLIE Mid-section grid reference if different from Grid Reference: 58746236 65CM/FAIRWAY designated site:

Date: 1.12.1994 Start time: 12.10 Surveyor name: JAMES SMITH/PAUL RAVEN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 21

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 22

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box)

vco	<input type="checkbox"/>	predominantly culverted	<input type="checkbox"/>
concave/bowl	<input type="checkbox"/>	open, but bed or banks predominantly artificial (eg box reinforced)	<input type="checkbox"/>
stepped valley floor (terraced)	<input type="checkbox"/>	open, little or no obvious reinforcement, but resectioned and/or realigned	<input type="checkbox"/>
symmetrical	<input type="checkbox"/>	open, but predominantly artificially dug (eg mill leat, dyke)	<input type="checkbox"/>
asymmetrical	<input checked="" type="checkbox"/>	not artificial, but dammed	<input type="checkbox"/>
gorge	<input type="checkbox"/>	no obvious modification ('semi-natural')	<input checked="" type="checkbox"/>

PREDOMINANT CHANNEL FORM (tick one box)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box)

torrential/whitewater	<input type="checkbox"/>	rifle-pool	<input checked="" type="checkbox"/>	slack	<input type="checkbox"/>
step-pool cascade	<input type="checkbox"/>	approximately laminar	<input type="checkbox"/>	impounded	<input type="checkbox"/>

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SPOT CHECKS (tick one box)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be entered across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	BO	BO	BO	BO	BO	SP	SO	BO	BO	SP
Predominant flow type (one entry only)	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

WETLAND VEGETATION STRUCTURE (to be entered over a 10m wide zone)

Fill in each box, tick one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	45	S	S	NO	NO	NO	NO	NO	NO	S
LEFT BANK	S	S	S	S	B	B	B	S	S	S
RIGHT BANK	S	S	S	S	U	U	U	U	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	S	S	C	C	C	C	C	C

CHANNEL VEGETATION TYPES (tick one box)

NONE (tick as appropriate)	<input type="checkbox"/>
Liverworts/mosses	<input checked="" type="checkbox"/>
Emergent herbs	<input checked="" type="checkbox"/>
Emergent reeds/bushes	<input checked="" type="checkbox"/>
Floating-leaved	<input type="checkbox"/>
Free-floating	<input type="checkbox"/>
Ambulans	<input type="checkbox"/>
Submerged	<input type="checkbox"/>
Filamentous algae	<input type="checkbox"/>

Use end column for overall assessment over 500m (tick one box)

12/19/19

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29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Planform category
Distance from source(km)

B FIELD SURVEY DETAILS Complete all questions

Site number: 278 River PAUL WYKE Mid-section grid reference if different from designated site:
Grid Reference: S6 44 9 333
Date 17.5.1994 Start time: 0920 Surveyor name PAUL HENVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☒ open, but predominantly artificially dug (eg. mill leat, dyke)
☐ not artificial, but dammed
☐ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential ☐ hillside ☐ infiltration ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	SP
- bank modification (one entry only)	RS	RS	RS	RS	NO	NO	NO	NO	NO	RI
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	ST
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	RI	CV
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	BR	SP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	RI	RI
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	NO	NO	NO	NO	NO	NO	S	NO
LEFT BANK	S	S	S	S	S	S	S	S	S	NO
RIGHT BANK	S	S	S	S	S	S	S	S	S	NO
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	NO	NO	NO	S	S	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or ✓ (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										✓
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										✓
Submerged										✓

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m ENTER SITE NUMBER 278

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or ✓ (present)

	L	R		L	R
Broadleaf/mixed woodland		✓	Bag, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land	E	✓
Scrub/brough pasture		E	Suburban/urban development		✓

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20 Right bank None ☐ Banklength % = 60

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or ✓ (present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut	✓		Resectioned		E
Vertical + toe	✓		Reinforced - whole bank		✓
Steep (> 45°)	E	E	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Peached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % = 70

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present E
None			E ≥ 33%		
Isolated/scattered			Shading of channel		✓
Regularly spaced, single			Overhanging boughs		
Occasional clumps	✓		Exposed bankside roots		✓
Semi-continuous		✓	Underwater tree roots		✓
Continuous			Fallen trees		✓
			Woody debris		✓

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Tick one box per feature				
Waterfall/cascade	✓		Unvegetated mid-channel bars	✓
Torrential flow (rapid)	✓		Vegetated mid-channel bars	✓
Laminar flow (run/glide)	✓		Mature island(s)	✓
Stale flow (slack)	✓		Unvegetated side bar	✓

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.75	Bankfull width (m)	3.0
Bank height if different (m)	2.5	Water width (m)	1.0
Embanked height (m)		Water depth (m)	0.6

Bed material at site is: consolidated ☐ clues: s'gal growth compact, stable
unconsolidated ☒ clues: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Number of Culverts = 1 Weirs = 0 Bridges = 0 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

	L	R	CHANNEL
BANKS			
None	✓	✓	None
Resectioning			Dredging
Bank-slowing			Weed-cutting
Enhancement			Enhancement works
			State

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

DOWNSTREAM SECTION INSECTIONED BANK. THEN APPEARS STAGNANT WITH LEAVY ALGAE BEFORE WATER BEDS. RIGHT BANK SIGNIFICANTLY MORE STEEP WITH MATTER HAYTHAM. LEFT SPOT CHECK R1 IN CURRENT. NATURALLY FEELING IN DEEP BUT A GENERAL

W. SPECIAL FEATURES eg. ashwens, adjacent habitats of high interest, incidental sightings

X. RIVER TYPING Refer to photographs of river type and indicate which resembles the site

Number (1-14) 1/2 None of them ☐

Y. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY AND SIGNED. THEN RETURN TO THE PERSON WHO ISSUED IT. SIGNATURE: PAUL HENVILLE DATE: 17.5.1994

Plots 28/29

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CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.0	Bank full width (m)	4.30	Bank full height (m)	1.0
Bank height if different (m)	1.0	Water width (m)	3.20	Bank height if different (m)	1.0
Embankment height (m)		Water depth (m)	1.40	Embankment height (m)	

Bed material at site is: consolidated ☒ clasts: silt/clay growth compact, stable *shale and silt*
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q10. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R1. NUMBER OF ARTIFICIAL FEATURES (Use only method, then total; tick "none" where appropriate)

None <input type="checkbox"/>	Number of	Channels =	Wells =	Bridges =	Outfalls =
S1. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick positive features)					
BANKS	L	R	CHANNEL		
Name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Name	<input checked="" type="checkbox"/>	
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>	
Bank-slowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>	
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>	State

T1. CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? No ☒ Yes ☐

U1. NOTABLE NUISANCE PLANT SPECIES (tick box(es)) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V1. BRIEF DESCRIPTIVE SENTENCE (Indicate 1 spot clearly representative of site as a whole)

W1. SPECIAL FEATURES (e.g. osiers, adjacent habitats of high interest, incidental sightings)

X1. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site best)

Number (1-14) ☒ None of them ☐

Y1. TIME TAKEN

5.0 min

RIVER HABITAT SURVEY: 1994 VERIFICATION

Date: April 1994 Page 1 of 4

A BACKGROUND INFORMATION - This information is being collected separately.

Altitude(m)	Slope	Mean Annual Flow category (1-10) Planform category
Solid geology	Drift geology	
Distance from source(km)		

B FIELD SURVEY DETAILS: Complete all questions

Site number: 279 River name: Dug Mid-section grid reference if different from designated site:

Grid Reference: SE 554353

Date: 17.5.1994 Start time: 1800 Surveyor's name: PAUL HENNULTZ

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

☐ vee

☐ concave/bowl

☐ stepped valley floor (terraced)

☒ symmetrical

☐ asymmetrical

☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

- predominantly culverted ☐
- open, but bed or banks predominantly artificial (eg bar reinforced) ☐
- open, little or no obvious reinforcement, but reticulated and/or realigned ☒
- open, but predominantly artificially dug (eg. mill leat, dyke) ☐
- not artificial, but dammed ☐
- no obvious modification ('semi-natural') ☐

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

spring-fed white water	run-off flood pool	flooded
silt-pool cascade	approximately laminar	impounded

[illegible]

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

A BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Altian Annual Flow category (1-10)
Solid geology Drift geology Platform category
Distance from source(km)

B FIELD SURVEY DETAILS Complete all questions

Site number: 280 River: COLLY DRAIN Mid-section grid reference if different from designated site:
Grid Reference: SE 645 346
Date: 20.5.1994 Start time: 11.45 Surveyor name: J. H. BLACKBURN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☒ open, but predominantly artificially dug (eg. mill leat, dyke)
☐ not artificial, but dammed
☐ no obvious modification ('semi-natural')

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater ☐ flood pool ☐ static ☒
step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
+ bank feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHANNEL										
Predominant channel substrate (one entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant flow type (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- channel modification(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
+ channel feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
+ bank feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter ND)	L	C	S	S	S	S	S	S	S	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter ND)	L	C	S	S	S	S	S	S	S	S

I CHANNEL VEGETATION TYPES (if in relevant boxes with one entry; use E (ca 10% area) or F (green))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

J SWEEP-UP OVER 500m ENTER SITE NUMBER

K LAND USE WITHIN 50m OF RIVER (tick 'none' box or estimate percentage banklength if present)

	L	R		L	R
Broadleaved woodland			Reg. marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

L LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

M BANK PROFILES WITHIN 500m (tick 'none' box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial re-usage		
			Post-bed		

N EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

O EXTENT OF TREES AND ASSOCIATED FEATURES

P TREES (tick one box per bank)

	Left	Right		None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q ASSOCIATED FEATURES (tick one box per feature)

R NATURAL CHANNEL FEATURES Record annual number of riffles, pools and point bars

	None	Present		None	Present	E
Number of Riffles			Unvegetated Point Bars			
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature islands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Q CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

R TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

S NUMBER OF ARTIFICIAL FEATURES Use tally method, then totals tick 'none' where appropriate

None ☐ Number of Culverts = Bridges = Outfalls =

T EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None
Re-sectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-coring
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

U CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

V NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knot-weed ☐

W BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

V. uniform artificial drain. clay subgrade with overlying silt. left bank adjacent to road with much veg. right bank with thick hedge + ground

X SPECIAL FEATURES (if above adjacent habitats of high interest, incidental sightings)

Nearly pool on opposite side of road with juniper + surrounded by alders

Y RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Z TIME TAKEN 40 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 14 NORTH WEST AVENUE, RICHARD PARCLOUGH HOUSE, WIRGIN, WILT. WILTS. SN10 3JH. TEL: 01297 511111. FAX: 01297 511112. E-MAIL: PETER.FOX@WILT.NHS.UK

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ENTER SITE NUMBER 281

LAND USE WITHIN 500m OF RIVER (tick one box per bank)

	L	R		L	R
Broadleaf/deciduous			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	✓	✓
Moorland/heath			Tilled land	E	E
Scrub/heath pasture			Schurban/urban development		✓

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per bank)

Left bank None ☒ Banklength % =

Right bank None ☒ Banklength % =

BANK PROFILES WITHIN 500m (tick one box per bank)

	L	R		L	R
Natural/unmodified			Artificial/modification		
Vertical/undercut	✓	✓	Resectioned		E
Vertical + toe	✓		Reinforced - whole bank		E
Scarp (> 45°)		E	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick one box per bank)

Left bank None ☒ Banklength % =

Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	L	R		L	R
None			Shading of channel		✓
Isolated/scattered	✓	✓	Overhanging boughs		✓
Regularly spaced, single			Exposed bankside roots	✓	✓
Occasional clump			Underwater tree roots	✓	✓
Semi-continuous			Fallen trees	✓	✓
Continuous			Woody debris	✓	✓

NATURAL CHANNEL FEATURES (tick one box per feature)

	Point =	Vegetated Point Bars =	Vegetated Point Bars =
Number of riffles	0		
Waterfall/cascade	✓		
Torrential flow (rapids)	✓		
Laminar flow (run/glide)	✓		
Stable flow (slack)	✓		
Exposed bedrock	✓		
Exposed boulders	✓		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.45	Bank full width (m)
Bank height if different (m)	2.0	Bank height if different (m)
Embankment height (m)		Embankment height (m)

Bed material at site is: consolidated ☒ coarse: silt/clay growth compact, stable
unconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☒ other ☒ (tick one box)

TRIBUTARIES (tick one box per tributary)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☒ Number of Obstructions =

Walls =

Bridges =

Outlets =

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

BANKS

None ☒ Riffle ☒ Channel ☒

Resectioning ☒ Dredging ☒

Bank-moving ☒ Weed-cutting ☒

Enhancement ☒ Enhancement works ☒

CHOICED CHANNEL (tick one box per feature)

In 50% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per species)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Channel is a straight uniform section with a stable bed and no significant features.

SPECIAL FEATURES (tick one box per feature)

RIVER TYPING (tick one box per feature)

Number (1-14) ☒ None of them ☐

CHECK THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-6713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 281 River Name: DYKE Mid-section grid reference if different from designated site: SE735739

Date: 18/5/1994 Start time: 1000 Surveyor name: PAUL HEINILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

predominantly culverted ☐

open, but bed or banks predominantly artificial (eg box reinforced) ☐

open, little or no obvious reinforcement, but resectioned and/or realigned ☒

open, but predominantly artificially dug (eg mill leat, dyke) ☐

not artificial, but dammed ☐

no obvious modification (semi-natural) ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐

step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	ST	ST	ST	ST
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
VEGETATION STRUCTURE (to be assessed across channel within a 1m wide zone)										
B = bare U = uniform S = single C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	S	U	U	U	U	S
RIGHT BANK	U	U	U	U	S	S	S	S	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL VEGETATION TYPES (tick one box per type)										
NONE (tick as appropriate)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Live-herbaceous										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use one column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Planform category
Distance from source(km)

FIELD SURVEY DETAILS: Complete all questions.

Site number: 282 River NAME: ... Mid-section grid reference if different from Grid Reference: ...
Date: 29.4.1994 Start time: 10:50 Surveyor name: ...

Are conditions affecting survey? No ☐ Yes ☐ If yes, state: ...

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

Diagram 1: ☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorgo

PREDOMINANT CHANNEL FORM (tick one box only)

Diagram 2: ☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

HABITAT VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (fill in channel bank, both or only; use A, B, C, U, S, or C) (tick one box)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Upriver/rocks										
Emergent herbs										
Emergent reeds/bushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER: 282

LAND USE WITHIN 500m OF RIVER (tick one box per 50m reach)

	L	R		L	R
Broadleaved woodland			Bag, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick 'none', box or estimate percentage, banklength if present)

Left bank: None ☒ Banklength % = ... Right bank: None ☒ Banklength % = ...

BANK PROFILES WITHIN 500m (tick one box per 50m reach)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/steepcut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Grads			Reinforced - toe only		
Composite			Artificial re-work		
			Poached		

VEGETATION (tick one box per bank)

Left bank: None ☒ Banklength % = ... Right bank: None ☒ Banklength % = ...

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right		None	Present
Trees			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffle, pool, and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/slide)				
Stale flow (slack)				
Exposed bedrock				
Exposed boulders				

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.5	Bankfull width (m)
Bank height if different (m)	1.5	Water width (m)
Bank height if different (m)	1.5	Bank height if different (m)
Bank height if different (m)	1.5	Bank height if different (m)
Bank height if different (m)	1.5	Bank height if different (m)

Bed material at site is: consolidated ☐ chest: silt/clay growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ chest: inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total, tick 'none' where appropriate)

None ☒ Number of Culverts = ... Weirs = ... Bridges = ... Outfalls = ...

EVIDENCE OF RECENT MANAGEMENT (Observe signs of recent activity)

	L	R	CHANNEL
Re-sectioning			
Bank-moving			
Enhancement			

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick boxes if you need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Summarize the site characteristics in a short, descriptive sentence)

STATE OF CHANNEL (tick one box)

State of channel: ...

SPECIAL FEATURES (tick one box)

Special features: ...

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box)

Time taken: ...

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HR. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4341; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 294 River: BOURN Mid-section grid reference if different from designated site: _____
 Date: 11/5/1994 Start time: 9:50 Surveyor name: J. P. Smith / B. H. Jones
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box) (19)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (11)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforcement) ☐ open, little or no obvious reinforcement, but realigned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ infounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 1m wide zone) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	U	U	U	U	U	S	S	S	S	S
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	S	S	S	S	S
LEFT BANK	U	U	U	U	U	S	S	S	S	S
RIGHT BANK	U	U	U	U	U	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use S (2-33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent sedges (e.g. Sparganium)										
Flowering-leaved - (e.g. Salix)										
Free-floating (e.g. Lemna)										
Amphibious										
Submerged (e.g. Elodea)										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

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J. LAND USE WITHIN 50m OF RIVER (tick one box for each 33% banklength or / if present)

	L	R		L	R
Broadleaved woodland			Dog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 5

L. BANK PROFILES WITHIN 50m (tick one box for each 33% banklength or / if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/horizontal			Recessed		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Patched		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

	Left	Right		None	Present
Trees			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade			
Torrential flow (rapids)			
Laminar flow (run/glide)			
Stille flow (shoal)			
Exposed bedrock			
Exposed boulders			

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P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	Channel	Right Bank
Bankfull height (m)	0.55	Bankfull width (m)
Bank height if different (m)	7.20	Bank height if different (m)
Embankment height (m)		Embankment height (m)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m reach? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Various signs; tick box(es))

	L	R		L	R
BANKS			CHANNEL		
Revetting			Dredging		
Bank-moving			Wood-cutting		
Enhancement			Enhancement work		

T. CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es)) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Uniform, straightened, recessed channel (dyke)

W. SPECIAL FEATURES (eg. obvious, adjacent habitats of high interest; incidental sightings)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 12 None of them ☐

Y. TIME TAKEN 55 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m

ENTIRE SITE NUMBER: 286

LAND USE WITHIN 50m OF RIVER (Use E for 33% banklength or F if present)

Deciduous/woodland									
Coniferous plantation									
Moorland/heath									
Scrub/rough pasture									
Suburban/urban development									

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present) for each bank)

Left bank: None ☒ Banklength % = 30

Right bank: None ☒ Banklength % = 30

L. BANK PROFILES WITHIN 50m (Use E for 33% banklength or F if present)

Natural/unmodified									
Vertical undercut									
Vertical + toe									
Step (>45°)									
Gentle									
Composite									
Artificial/modified									
Re-sectioned									
Reinforced - whole bank									
Reinforced - toe only									
Reinforced - toe + toe									
Artificial toe-steps									
Poached									

M. EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % =

Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None									
Isolated/scattered									
Regularly spaced, single									
Occasional clumps									
Semi-continuous									
Continuous									

ASSOCIATED FEATURES (Tick one box per feature)

None									
Shading of channel									
Overhanging boughs									
Exposed bankside roots									
Underwater tree roots									
Fallen trees									
Woody debris									

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles									
Waterfall/cascade									
Torrential flow (rapids)									
Laminar flow (run/slide)									
Stable flow (slack)									
Exposed bedrock									
Exposed boulders									
Unvegetated point bars									
Vegetated point bars									
Unvegetated mid-channel bars									
Vegetated mid-channel bars									
Mature island(s)									
Unvegetated side bar									
Vegetated side bar									
Artificial									

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DEFINITIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.75	Bank full height (m)
Bank height if different (m)	2.10	Bank height if different (m)
Embanked height (m)	0.70	Embanked height (m)

Bank full width (m): 2.25

Water width (m): 2.0

Water depth (m): 0.20

Dead material at site is:

consolidated ☐ chest: algal growth compact, stable

unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length: No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☒ Number of: Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick boxes)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input type="checkbox"/>
Re-sectioning <input type="checkbox"/>	Dredging <input checked="" type="checkbox"/>
Bank-spoiling <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

T. CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Outline if spot checks representative of site as a whole)

Uniform drain with v. steep banks. V. narrow riparian zone on both banks. Drain runs through intensively arable farmland.

W. SPECIAL FEATURES (eg arboreal, adjacent habitats of high interest; incidental highlights)

X. RIVER TYPING (Refer to photographs of river types and indicate which "tributaries" the site is representative of)

Number (1-14) 12. Name of them ☐

Y. TIME TAKEN (tick one box only)

45 mins

Z. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND SIGNED, THEN RETURN TO: PETER FOX, KEN NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, CHeshire, WA1 1JH. TEL: 01925 434444. FAX: 01925 434445. E-MAIL: PETER.FOX@NORTHWEST.NHS.uk

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m):

Slope: Drift geology

Mean Annual Flow category (1-10):

Planform category:

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 286 River: LANTON

Grid Reference: TA174326 Q20W

Mid-section grid reference if different from designated site:

Date: 11/5/1994 Start time: 16:15 Surveyor name: IAIN SUTHERLAND

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 27

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 28

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

U ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐

open, but bed or banks predominantly artificial (eg bar reinforcement) ☐

open, little or no obvious reinforcement, but resectioned and/or realigned ☐

open, but predominantly artificially dug (eg. mill leat, dyke) ☒

not artificial, but dammed ☐

no obvious modification ("semi-natural") ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater ☐ riffle-pool ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. SPOT CHECKS (as 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

U = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E for 33% width or F if vertical)

NONE (tick as appropriate)

Liverworts/mosses ☐

Emergent herbs ☒

Emergent root/sedges ☒

Floating-leaved ☐

Free-floating ☐

Amphibious ☐

Submerged ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SURVEYED OVER 500m ENTER SITE NUMBER 286

LAND USE WITHIN 50m OF RIVER Use E (2/33% banklength) or J if present

	L	R		L	R
Broadleaf/mixed woodland			Brk, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE. Tick "none" box or estimate percentage banklength (if present)

Left bank None ☒ Banklength G = Right bank None ☒ Banklength G =

L BANK PROFILES WITHIN 500m. Use E (2/33% banklength) or J if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut			Revetted		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial in o-stage		
			Paved		

M ENBANKMENTS. Tick "none" box or estimate percentage banklength (if present)

Left bank None ☒ Banklength G = Right bank None ☒ Banklength G =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present	E
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	E > 33%			
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

O NATURAL CHANNEL FEATURES. Record actual number of riffles, pools and point bars.

	None	Present		None	Present	E
Number of riffles			Unvegetated Point Bars			
Waterfall/stepped	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbulent flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☒ chert: algal growth compact, stable
unconsolidated ☐ chert: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none", where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT (Observe signs; tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-erosion	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			State

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Very uniform drainage ditch. Deep impregnated banks. A little slumping of banks. Drain is intensively grazed.

W SPECIAL FEATURES (eg arboreal, estuarine habitats of high interest; incidental sightings)

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) 14 None of them ☐

Y TIME TAKEN 15 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NW NORTHWEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HR. HELPLINE NUMBERS: PETER FOX 01942 550145, JENNY FAIRCLOUGH 01942 550146, ANDREW BROOKS 01942 550147.

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ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

Broadleaved woodland	L	R	Bog, marsh, fen	L	R
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

Left bank None ☐ Backlength = 90 Right bank None ☐ Backlength = 90

BANK PROFILES WITHIN 500m, Dir E (tick one box per feature)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undrained			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

Left bank None ☐ Backlength = Right bank None ☐ Backlength =

EXTENT OF TREES AND ASSOCIATED FEATURES (Tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Scrub/continuous			Fallen trees		
Continuous			Woody debris		

Left bank None ☐ Backlength = Right bank None ☐ Backlength =

EXTENT OF CHANNEL FEATURES (Tick one box per feature)

Number of riffles	Left	Right	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature				
Waterfall/cascade			Unvegetated mid-channel bars	
Torrential flow (upside)			Vegetated mid-channel bars	
Laminar flow (near side)			Mature island(s)	
Stable flow (slack)			Unvegetated side bar	
Exposed bedrock			Vegetated side bar	
Exposed boulders			Artificial	

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ENTER SITE NUMBER

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 1 Outfalls = 2

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

BANKS	L	R	CHANNEL
None			None
Re-sectioning			Dredging
Bank-sloping			Wood-cutting
Enhancement			Enhancement works

CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

US NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (include if spot checks representative of site area)

SPECIAL FEATURES (tick one box per feature)

RIVER TYPING (tick one box per feature)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HB. HELPLINE NUMBERS: PETER FOX 7-21-2142; PAUL RAYEN 7-18-434; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

ENTER SITE NUMBER

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 293 River name: River Mersey Mid-section grid reference if different from Grid Reference: 55042757 Back

Date: 1.1.1994 Start time: 16:05 Surveyor name: John Gwynn / Bill

Are conditions affecting survey? No ☐ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 26

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 27

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

V-shaped ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

ENTER SITE NUMBER

SPOT CHECK 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width at 10m intervals)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
- bank feature(s)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
CHANNEL										
Predominant channel substrate (one entry only)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Predominant flow type (one entry only)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
- channel modification(s)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
- channel feature(s)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
RIGHT BANK										
Predominant bank material (one entry only)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
- bank modification (one entry only)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
- bank feature(s)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

VEGETATION STRUCTURE (to be assessed over a 10m width, tick one box per feature)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	B	U	S	C	B	U	S	C
LEFT BANK	B	U	S	C	B	U	S	C
RIGHT BANK	B	U	S	C	B	U	S	C
RIGHT RIPARIAN ZONE (if none, enter NO)	B	U	S	C	B	U	S	C

VEGETATION TYPES (tick one box per feature)

NONE (tick as appropriate)

Living tree/scrub

Emergent herbs

Emergent reeds/rushes

Floating-leaved

Free-floating

Amphibious

Submerged

Filamentous algae

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

FIELD SURVEY DETAILS: Complete all questions.

Site number: 294 River: Cuffin Mid-section grid reference if different from designated site:
Grid Reference: 50149247.334

Date: 1.1.1994 Start time: 1:15 Surveyor name: John Smith

Are conditions affecting survey? No ☐ Yes ☐ If yes, state: (12)

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photographic general character? No ☐ Yes ☒ (tick one box) (23) (25)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (24)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforced) ☐ open, little or no obvious reinforcement, but resilted and/or realigned ☒ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification, ('semi-natural')

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SY	ST	ST	ST	CL	EA	ST	ST	ST	CL
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	CO	SP	CO	SP	SP	SP	SP	SP	SP	CO
Predominant flow type (one entry only)	AL	PO	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	TE	TE	TE	TE	TE	TE	TE	TE	TE
RIGHT BANK										
Predominant bank material (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C	C	C	C	C	C	C
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	C	C	C	C	C	C	C	C
LEFT BANK	U	B	S	C	C	C	C	C	C	C
RIGHT BANK	U	S	S	S	B	B	S	S	S	C
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	NO	NO	NO	NO	NO	S

CHANNEL VEGETATION TYPES (for reference only, tick one entry only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Upriver/mosses										
Emergent herbs										
Emergent reeds/rushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or S)

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ENTER SITE NUMBER: 294

LAND USE WITHIN 50m OF RIVER (tick one box per 50m)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Setback/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per 50m)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 50

BANK PROFILES WITHIN 50m (tick one box per 50m)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut			Resilted		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick one box per 50m)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 50

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/heather			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of	Unvegetated Point Bars	Vegetated Point Bars
Number of Riffles	1	1	1
Number of Pools	3	1	1
Number of Point Bars	1	1	1

THRESHOLD FLOW (tick one box per feature)

	None	Present		None	Present
Waterfall/cascade			Unvegetated mid-channel bars		
Thermal flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Stony islands		
Sustained flow (shut)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial - R-bank		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	2.10	Bankfull width (m)	11.30
Bank height if different (m)	—	Water width (m)	5.20
Embankment height (m)	—	Water depth (m)	0.67
Embankment height (m)	—	Embankment height (m)	—

Bed material at site is: consolidated ☒ close algal growth compact, stable
unconsolidated ☐ clean fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only ticks, then total the 'none', where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious signs? tick box (1) if present)

	L	R	CHANNEL
None			None
Resilienting			Dredging
Bank-raising			Wood-cutting
Enhancement			Enhancement works
			State

CHOICED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE/PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Back flowing through a narrow, straight channel with a steep, rocky bed. The channel is choked with vegetation, especially on the right bank. The channel is choked with vegetation, especially on the right bank.

SPECIAL FEATURES (tick one box only)

Other (tick one box only)

RIVER TYPING (Refer to photo graph of river type and indicate which resembles the site)

Number (1-14) (1) None of them

TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. PHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER **29**

LAND USE WITHIN 500M OF RIVER (Use E for enhanced, N for natural, U for urban, A for agricultural, F for forest, S for suburban, D for developed, O for other)

Broads/modified woodland							
Coniferous plantation							
Moored/haith							
Scrub/rough pasture							
Suburban/urban development							

LINEAR EXTENT OF RIPARIAN ZONE (Use E for enhanced, N for natural, U for urban, A for agricultural, F for forest, S for suburban, D for developed, O for other)

Left bank None ☐ Banklength % = **70**

Right bank None ☐ Banklength % = **75**

BANK PROFILES WITHIN 500M (Use E for enhanced, N for natural, U for urban, A for agricultural, F for forest, S for suburban, D for developed, O for other)

Natural/unmodified							
Vertical/horizontal							
Vertical + toe							
Slope (> 45°)							
Grade							
Composite							
Artificial/modified							
Re-sectioned							
Reinforced - whole bank							
Reinforced - top only							
Reinforced - toe only							
Artificial two-stage							
Poached							

EMBANKMENTS (tick, none, dot or estimate percentage banklength if present)

Left bank None ☐ Banklength % =

Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None							
Isolated/scattered							
Regularly spaced, single							
Occasional clumps							
Semi-continuous							
Continuous							

ASSOCIATED FEATURES (Tick one box per feature)

Shading of channel							
Overhanging boughs							
Exposed bankside roots							
Under-silt tree roots							
Fallen trees							
Woody debris							

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 23	Pools = 0	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Waterfall/cascade			
Torrential flow (rapid)			
Laminar flow (run/glide)			
Stale flow (sludgy)			
Exposed bedrock			
Exposed boulders			
Unvegetated mid-channel bars			
Vegetated mid-channel bars			
Algae islands			
Unvegetated side bar			
Vegetated side bar			
Artificial			

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (Use E for enhanced, N for natural, U for urban, A for agricultural, F for forest, S for suburban, D for developed, O for other)

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	0.2	Bankfull width (m)	0.5	Bankfull height (m)	0.2
Bank height if different (m)		Water width (m)	0.5	Bank height if different (m)	
Embanked height (m)		Water depth (m)	0.08	Embanked height (m)	

Bed material at site is: consolidated ☐ clast: slight growth compact, stable
 unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box, none, dot or estimate percentage banklength if present)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use E for enhanced, N for natural, U for urban, A for agricultural, F for forest, S for suburban, D for developed, O for other)

None ☐ Number of Culverts = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box, none, dot or estimate percentage banklength if present)

BANKS		CHANNEL	
None		None	
Re-sectioning		Dredging	
Bank-moving		Wood-culling	
Enhancement		Enhancement works	

CHOKED CHANNEL (tick one box, none, dot or estimate percentage banklength if present)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NOISANCE, PLANT SPECIES (tick one box, none, dot or estimate percentage banklength if present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if appropriate, representative of the site)

Small headwater stream rising in rough land and entering urban area with trash & rubble for last section. (page 201)

SPECIAL FEATURES (tick one box, none, dot or estimate percentage banklength if present)

NONE

RIVER TYPING (tick one box, none, dot or estimate percentage banklength if present)

Number (1-14) ☐ None of them ☐

DATE & TIME TAKEN: 29/4/94

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3148; PAUL RAVEN 7-16-4343; ANDREW BROOKES 7-15-5712

(56)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected, reported)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: **205** River: **CRUVE L.** Mid-section grid reference if different from designated site:

Date: **20/5/1994** Start time: **11:00** Surveyor name: **R. REYNOLDS**

Are conditions affecting survey? No ☐ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

vee	
concave/bowl	
stepped valley floor (terraced)	
symmetrical	
asymmetrical	
gorge	

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted	
open, but bed or banks predominantly artificial (eg box reinforced)	
open, little or no obvious reinforcement, but resectioned and/or realigned	
open, but predominantly artificially dug (eg. mill leat, dyke)	
not artificial, but dammed	
no obvious modification ('natural')	

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater	
step-pool cascade	
approximately laminar	
stagnant	
impounded	

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SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	B	E	A	O	P	G	E	A	E	A
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	S	C	S	C	V	B	N	N	N	N
CHANNEL										
Predominant channel substrate (one entry only)	G	F	C	O	P	C	O	P	C	O
Predominant flow type (one entry only)	R	R	R	R	R	R	R	R	R	R
- channel modification(s)	N	N	N	N	N	N	N	N	N	N
- channel feature(s)	T	R	T	R	N	N	N	N	N	N
RIGHT BANK										
Predominant bank material (one entry only)	B	E	A	E	A	E	A	E	A	E
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N

VEGETATION STRUCTURE (to be assessed over a 10m wide zone) (Fill in each box, for each spot check)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	U	C	S	N	O	N	O	S	S
LEFT BANK	B	B	U	S	U	U	S	U	S
RIGHT BANK	S	C	U	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	N	O	U	S	S	S	C

CHANNEL VEGETATION TYPES (tick one box, none, dot or estimate percentage banklength if present)

NONE (tick as appropriate)

Utricularia/najas	
Emergent herbs	
Emergent reeds/bushes	
Floating-leaved	
Free-floating	
Amphibious	
Submersed	
Filamentous algae	

Use end column for overall assessment over 500m (use E or N)

29 April 1994

RIVER HABITAT SURVEY: 1994 VERIFICATION

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS

to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	2m	Bank full width (m)	50	Bank full height (m)	2m
Bank height if different (m)		Water width (m)	48	Bank height if different (m)	
Embanked height (m)	8	Water depth (m)	32	Embanked height (m)	

Bed material at site is:

consolidated

☐

clasts: algal growth compact, stable

unconsolidated

☒

clasts: fresh clean gravel, easily dislodged, loose

unknown

☐

irresolvable or not visible (eg turbid water)

Location of measurements is:

riffle

☐

run or glide

☒

other

☐

(tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length?

No

☒

Yes

☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None	<input checked="" type="checkbox"/>	Number of	Culverts =	Weirs =	Bridges =	Outfalls =
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S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	L	R	CHANNEL	
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-reinving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>
Enhancement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Enhancement works	<input type="checkbox"/>
				Stake

T. CHOSED CHANNEL?

Is 33% or more of the channel over 500m choked with vegetation?

No

☒

Yes

☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed	<input type="checkbox"/>	Himalayan Balsam	<input checked="" type="checkbox"/>	Japanese Knotweed	<input type="checkbox"/>
---------------	--------------------------	------------------	-------------------------------------	-------------------	--------------------------

V. BRIEF DESCRIPTIVE SENTENCE (Underline if spot checks representative of site at a whole)

wide, deep with uniform flow. High embankments on both banks composed of 'cool spots' densely wooded on left bank, less well developed on right

W. SPECIAL FEATURES (if obvious, affective habitats of high interest; interrelated sightings)

ESAB Mire (Equisetum sylvaticum) behind left embankment

see small red flower (Sedum sp.)

see along E right bank

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14)

☐

None of them

☒

Y. TIME TAKEN

50 minutes

Z. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HF. TELEPHONE NUMBERS: PETER FOX 01942 861600, PAUL KAY 01942 861601, ANDREW BROOKES 01942 861602

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____
 Solid geology _____ Drift geology _____
 Distance from source(km) _____ Mean Annual Flow category (1-10) _____
 Platform category _____

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 297 River: AIRE Mid-section grid reference if different from designated site: _____
 Grid Reference: _____
 Date: 17/5/1994 Start time: 11 55 Surveyor name: J. BAKERBURN
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg bar reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg. mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

If there is functioning navigation? No ☐ Yes ☐ Don't know ☒

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/white water ☐ riffle-pool ☐ static ☐
 step-pool cascade ☒ approximately laminar ☒ impounded ☐

[illegible]

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 298 River FIRE Mid-section grid reference if different from designated site: _____
 Date 17.1.5.1994 Start time: 09 20 Surveyor name: J. BLACKBURN
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☒

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ intermittent ☐ intermittent with a small pool ☐ intermittent with a large pool ☒ approximately laminar ☐ turbulent ☐ imposed

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	RR	RR	RR	RR	RR	RR	RR	RR	RR	EA
- bank modification (one entry only)	R1	R1	R1	R1	R1	R1	R1	R1	R1	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	NV	NV	SI	NV	NV	NV	NV	NV	NV	NV
Predominant flow type (one entry only)	AL	AL	AL	AL	ST	ST	ST	ST	ST	ST
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	RR	RR	RR	RR	RR	RR
- bank modification (one entry only)	NO	NO	R1	NO	R1	R1	R1	R1	R1	R1
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	S	S	S	S	NO
LEFT BANK	S	S	S	S	S	S	S	S	S	B
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (tick all relevant boxes with one entry per box: use E for 33% cover or V for present)

NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Where cut/moves										
Emergent herbs										
Emergent reeds/sedges										
Flats/planted										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 298

J. LAND USE WITHIN 50m OF RIVER (tick all relevant boxes with one entry per box: use E for 33% cover or V for present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	E	E
Moorland heath			Tilled land		E
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 20

L. BANK PROFILES WITHIN 100m (tick all relevant boxes with one entry per box: use E for 33% banklength or V for present)

NATURAL/UNMODIFIED

	L	R		L	R
Vertical/undrained			Artificial/modified		
Vertical + toe			Retention		
Steep (> 45°)			Reinforced - whole bank		
Gently			Reinforced - top only		
Composite			Reinforced - toe only		
			Artificial re-vegetation		
			Perched		

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick all relevant boxes with one entry per box)

TREES (tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES (tick all relevant boxes with one entry per box)

	None	Present		None	Present
Number of riffles =			Unvegetated Point Bars =		
Waterfalls/rocks			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Major islands(s)		
Stable flow (slack)			Unvegetated side bar		

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P. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK			
Bankfull height (m)	3.0	Bankfull width (m)	3.5m	Bankfull height (m)	3.0
Bank height if different (m)		Water width (m)	3.0	Bank height if different (m)	
Embanked height (m)	2.0	Embanked height (m)	2.0		

Bed material at site is: consolidated ☐ chest: silt/growth compact, stable
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ insecticide or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☐ other ☒ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total: tick 'none' where appropriate)

None	Number of	Culverts =	Wells =	Drainage =	Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (tick all relevant boxes with one entry per box)

BANKS	L	R	CHANNEL
None			None
Revegetating			Dredging
Bank-moving			Wood-cutting
Enhancement			Enhancement works
			State

T. CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NOISANCE PLANT SPECIES (tick box(es) - no need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (underline if spot checks representative of site or whole reach)

Uniform 500m of low flow stream due to high influence of bank erosion - simple (little) channel

W. SPECIAL FEATURES (tick box(es) - no need to estimate abundance)

Waterfall, Low flow, no flood

X. RIVER TYPING (tick box(es) - no need to estimate abundance)

Number (1-14) ☐ None of them ☒

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 300 River Ouse Mid-section grid reference if different from designated site: _____
 Date: 1.5.1994 Start time: 0845 Surveyor name: PAUL REUVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I for each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RIGHT BANK										
Predominant bank material (one entry only)	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHANNEL										
Predominant channel substrate (one entry only)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RIGHT BANK										
Predominant bank material (one entry only)	BR	BR	BR	BR	BR	BR	BR	BR	BR	BR
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

VEGETATION STRUCTURE (to be assessed over 10m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = single C = complex Refer to spot-check key

	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT RIPARIAN ZONE (if none, enter NO)										
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (tick in relevant box; tick one entry; use B, C, S, U, or V, (option) S, V)

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (see E or A)

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LAND USE WITHIN 50m OF RIVER (Use 8 to 30m banklength or 1/2 of stream)

	L	R		L	R
Broadleaved/wooded			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick none, but estimate percentage banklength if present)

Left bank None ☒ Banklength % = _____ Right bank None ☐ Banklength % = _____

BANK PROFILES WITHIN 50m (tick none, but estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/modification		
Vertical/undercut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gorge			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick none, but estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/slide)				
Stade flow (dick)				
Exposed bedrock				
Exposed boulder				

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform stretch; preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material of the site: consolidated ☐ chest algal growth compact, stable ☐
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick none where appropriate)

None ☒ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	Channel
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Re-sectioning <input type="checkbox"/>	Dridding <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wind-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOICED CHANNEL

Is 33% or more of the channel over 500m choiced with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es); tick none if not estimated abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of the site as a whole)

Channel is a straight, uniform stretch with a riffle in the middle. The banks are mostly grassy with some trees on the left bank. The water is clear and the flow is steady.

SPECIAL FEATURES (tick box(es); tick none if not estimated abundance)

Number (1-14) ☐ None of them ☒

TIME TAKEN (tick one box)

Number (1-14) ☐ None of them ☒

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JL. TEL: 01925 434433; FAX: 01925 434434; ANDREW BROOKES 01925 434435

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BACKGROUND INFORMATION This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

FIELD SURVEY DETAILS Complete all questions.

Site number: 203 River: BODALLA Mid-section grid reference if different from designated site: _____
 Grid Reference: TQ-08 288 0000
 Date: 11.5.1994 Start time: 10:15 Surveyor name: J. A. S. / B. L. L. (J. A. S. / B. L. L.)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (20)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (20)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☒ not artificial, but dammed ☐ no obvious modification (semi-natural) ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☐ impounded ☒

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G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto II and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
- bank feature(s)	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD
CHANNEL	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	PD	PD	PD	PD	PD	PD	PD	PD	PD	PD
- channel modification(s)	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
- channel feature(s)	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
RIGHT BANK	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
Predominant bank material (one entry only)	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
- bank modification (one entry only)	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD
- bank feature(s)	LD	LD	LD	LD	LD	LD	LD	LD	LD	LD

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	S	U	S	U	S	U	S	U	S
LEFT BANK	U	U	S	S	U	S	U	S	U	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only (to 1% area) or 2 (Green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

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J. LAND USE WITHIN 50m OF RIVER Use 5 (to 10% banklength) or 2 (if present)

	L	R		L	R
Breeds/limited woodland			Dec. marsh, fen		
Coniferous plantation			Improved/semi-improved grassland		
Moorland/heath			Tilled land		
Scrub/hedge pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 60 Right bank: None ☐ Banklength % = 95

L. BANK PROFILES WITHIN 500m Use 5 (to 10% banklength) or 2 (if present)

	L	R		L	R
Natural/Unmodified			Artificial/Unmodified		
Vertical/hand-cut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. BANK PROFILES (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)		ASSOCIATED FEATURES (Tick one box per feature)	
Left	Right	Left	Right
None		Shading of channel	
Isolated/scattered		Overhanging boughs	
Regularly spaced, single		Exposed bankside roots	
Occasional clumps		Underwater tree roots	
Scrub/conifers		Fallen trees	
Conifers		Woody debris	

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of Riffles		Number of Pools		Number of Unvegetated Point Bars		Number of Vegetated Point Bars	
Left	Right	Left	Right	Left	Right	Left	Right
Waterfalls/cascades				Unvegetated mid-channel bars		Unvegetated mid-channel bars	
Torrential flow (rapids)				Vegetated mid-channel bars		Vegetated mid-channel bars	
Laminar flow (run/glide)				Islands		Islands	
Stark flow (black)				Unvegetated side bar		Unvegetated side bar	
Flowed back				Vegetated side bar		Vegetated side bar	
Exposed boulders				Artificial		Artificial	

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P. CHANNEL DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site: consolidated ☐ chest algal growth compact, stable
 unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements (to: riffle ☐ run or glide ☐ other ☒ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total (tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Observe signs, tick boxes)

BANKS	CHANNEL
None	None
Re-sectioning	Dredging
Bank-mow lag	Wood-cutting
Enhancement	Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE Indicate if spot checks representative of site as a whole

Stream channel, effectively dry in urban area (see photo). Channel full of urban debris, has deteriorated due to silt and debris. Junction of brook with main channel is a good example of the channel.

W. SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, incidental sightings)

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) 12 None of them ☐

Y. TIME TAKEN 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HR. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

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BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Distance from source(km) Planform category

FIELD SURVEY DETAILS: Complete all questions.

Site number: 315 River H0-115 Mile-section grid reference: If different from designated site: Grid Reference: 142158

Date: 13/5/1994 Start time: 9:00 Surveyor name: N. CRIEVE R. KRITAGIE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only):

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorgo

PREDOMINANT CHANNEL FORM (tick one box only):

☐ predominantly culverted ☒ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

NAVIGATION (tick one box only):

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only):

☐ torrential/whitewater ☐ riffle-pool ☐ stage ☐ step-pool cascade ☐ approximately laminar ☒ impounded

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

OVERALL PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto II and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	BR	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	BR	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	RI	RI	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Predominant channel substrate (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Predominant flow type (one entry only)	RF	PD	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	DA	NO	NO	NO	NO	NO	NO	BR	NO
- channel feature(s)	MI	NO	NO	TR	TR	NO	TR	TR	TR	TR
RIGHT BANK	EA	BR	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	BR	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	RI	RI	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	NO	NO	NO	NO	NO	NO	NO	NO

II = bare U = uniform S = simple C = complex Refer to spot-check key

	NO	NO	NO	S	C	C	S	C	S	S
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	S	C	C	S	C	S	S
LEFT BANK	S	S	C	C	S	S	S	C	S	S
RIGHT BANK	S	S	C	C	S	S	B	S	S	B
RIGHT RIPARIAN ZONE (if none, enter NO)	S	NO	NO	C	C	NO	NO	C	C	NO

LAND-USE/VEGETATION TYPES (tick in column for each type, tick in row for each type)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick B or N)

1. Most of the channel substrate was visible - 2. River for a 500m stretch, 3. Slopes, 4. Substrate, 5. Current, 6. Bank, 7. Bank, 8. Bank, 9. Bank, 10. Bank

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 315

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Howland/heath			Tilled land		
Scrub/brough pasture			Suburban/urban development		

Left bank None ☐ Banklength % = 80 Right bank None ☐ Banklength % = 110

BANK PROFILES WITHIN 500m (tick one box per feature)

	L	R		L	R
Natural/Unmodified			Artificial/Unmodified		
Vertical/Undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right		Left	Right
None			Shading of channel		
Half-shaded			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

TOPOGRAPHICAL CHANNEL FEATURES (tick one box per feature)

	None	Present		None	Present
Number of riffles = 1			Unvegetated mid-channel bars		
Waterfalls/scuds			Vegetated mid-channel bars		
Torrential flow (rapids)			Algae island(s)		
Laminar flow (run/glide)			Unvegetated side bar		
Stale flow (slack)			Vegetated side bar		
Exposed bedrock			Artificial		
Exposed boulders					

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CHANNEL DIMENSIONS AND INFLUENCES (tick one box per feature)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.0	22.0	1.0
Bank height if different (m)	---	Water width (m)	15.0
Bank height if different (m)	---	Water depth (m)	0.5
Embankment height (m)	---	Embankment height (m)	---

Bed material at site: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☒ other ☐ (tick one box)

ATRIUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 3 Outfalls = 3

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

	None	Present		None	Present
BANKS			CHANNEL		
Resectioning			None		
Bank-edge log			Dredging		
Enhancement			Wood-culling		
			Enhancement works		

CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE INVASIVE PLANT SPECIES (tick one box per feature)

Glenn Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Slow to flow, urban river, with confined channels. Bed of river mostly not visible, but lots of trash observed.

SPECIAL FEATURES (tick one box per feature)

NONE!

RIVER TYPING (tick one box per feature)

Number (1-14) ☒ None of them ☐

TIME TAKEN (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WAI 1115. TELEPHONE NUMBERS: PETER FOX 7-11-2140; PAUL RAYEN 7-11-2341; ANDREW BROOKES 7-11-5111

(10, 1)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Site number: 317 River: OWER BECK Mid-section grid reference if different from designated site: SS 33 1161

Date: 7.5.1994 Start time: 12:30 Surveyor name: N. CRIEVE
R. ARMITAGE

Are conditions affecting survey? No ☐ Yes ☒ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SPOT CHECKS (6 50m spots)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto II and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	BR	EA	EA	EA	BR	BR
- bank modification (one entry only)	NO	NO	NO	NO	RI	NO	NO	NO	RI	RI
- bank feature(s)	NO	NO	NO	SC	NO	SC	SC	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CP	CP	SI	SI	CO	CP	CO	CO	CO	CO
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	RF	AL	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	BR	RS	NO	NO	NO	NO
- channel feature(s)	NO	NO	TR	NO	TR	MI	NO	NO	BO	BO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	BR	EA	BR	BR	BR	BR
- bank modification (one entry only)	NO	NO	NO	NO	RI	NO	RI	RI	RI	RI
- bank feature(s)	NO	NO	NO	NO	SC	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	C	C	C	C	S	C	S	C
LEFT BANK	C	C	C	B	B	C	C	C	B	B
RIGHT BANK	C	C	S	B	B	C	U	U	B	B
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: B = bare, S = simple, C = complex, U = uniform, E = emergent, L = lentic, F = floating, A = amphibious, S = submerged, F = filamentous algae)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use red return for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

LAND USE WITHIN 500m OF RIVER (up to 5% of 33% banklength if 2 or 3 present)

	L	R		L	R
Broadleaf/mixed woodland			Log, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

Left bank None ☐ Banklength S = 50 Right bank None ☐ Banklength R = 55

BANK PROFILES WITHIN 500m (up to 5% of 33% banklength if 2 or 3 present)

	L	R		L	R
Natural/unmodified			Reinforced		
Vertical/undercut			Reinforced - whole bank		
Vertical + toe			Reinforced - top only		
Steep (> 45°)			Reinforced - toe only		
Grass			Artificial revetment		
Composite			Poached		

Left bank None ☒ Banklength S = Right bank None ☒ Banklength R =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	L	R		L	R
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present II		None	Present II
Shading of channel			Overhanging boughs		
Overhanging boughs			Exposed bankside roots		
Exposed bankside roots			Underwater tree roots		
Underwater tree roots			Fallen trees		
Fallen trees			Woody debris		
Woody debris					

NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present II		None	Present II
Waterfall/rapids			Unvegetated mid-channel bars		
Laminar flow (run/glide)			Vegetated mid-channel bars		
Stable flow (slack)			Mature island(s)		
Exposed bedrock			Unvegetated side bar		
Exposed boulders			Vegetated side bar		
			Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfall height (m)	0.8	Bankfall width (m)	4.5
Bank height (if different) (m)	0.6	Water width (m)	3.5
Bank height (if different) (m)		Bank height (if different) (m)	0.6
Embedded height (m)		Water depth (m)	0.45
Embedded height (m)		Embedded height (m)	

Bed material at site is: consolidated ☐ chert; algal growth compact, stable
unconsolidated ☒ chert; fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐ UPPER SECTION WAS JUST LGS

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total tick 'none', where appropriate)

None ☐ Number of Culverts = 0 - Weirs = 0 Bridges = 3 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

	None	Present II		None	Present II
Revetting			Channel		
Bank-mowing			Drainage		
Enhancement			Wood-cutting		
			Enhancement works		

CHONED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick boxes) (no need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

RIEFS/INSCRIPTIVE SENTENCES (underline if spot checks representative of site as a whole)

Regulated/modified channel, upper half mostly riffle, lower half glide. Also old mill channel.

SPECIAL FEATURES (tick one box per feature)

Waterfall/rapids ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

RIVER TYING (tick one box per feature)

Number (1-14) ☒ None of them ☐

TIME TAKEN (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAMPED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. TELEPHONE NUMBERS: PETER FOX 741-2140; PAUL RAYN 741-0443; ANDREW BROOKES 745-5712

A BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

B FIELD SURVEY DETAILS Complete all questions

Site number: 318 River type: M4 Mid-section grid reference if different from designated site:
Grid Reference: SE 444 158

Date: 17.5.1994 Start time: 14.05 Surveyor name: J.H. BLACKBURN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C PREDOMINANT VALLEY FORM (tick one box only)

☐ Vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg. mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ time-pool ☒ static
☐ step-pool cascade ☐ approximately laminar ☐ impounded

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	BR	BR	BR	BR	EA	BR	BR
- bank modification (one entry only)	NO	NO	NO	RI	RI	RI	RI	NO	NO	NO
- bank feature(s)	SC	NO	SC	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CO	GP	GP	CL	BO	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	RF	RF	RF	RE	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	BR	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	RI	RI	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	S	NO	NO	NO	NO	NO	NO
LEFT BANK	S	C	B	S	B	C	B	S	S	C
RIGHT BANK	C	S	C	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	S	NO	C	C	S	NO	NO

I CHANNEL VEGETATION TYPES (tick relevant boxes with one entry only: B (to 33% area) or P (percent))

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flats/planted										
Free-floating										
Amphibious										
Submerged										

LAND USE WITHIN 50m OF RIVER Use E (to 33% banklength) or P (percent)

	L	R		L	R
Bracken/Dead woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Shrub/rough pasture			Tilled land		
			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength % = 10 Right bank: None ☐ Banklength % = 80

L BANK PROFILES WITHIN 50m Use E (to 33% banklength) or P (percent)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/modern			Reinforced		
Vertical + low			Reinforced - no hole bank		
Slope (>45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None			Shading of channel			
Isolated/harsh			Overhanging boughs			
Regularly spaced, single			Exposed bankside roots			
Occasional clumps			Under-use tree roots			
Semi-continuous			Fallen trees			
Continuous			Woody debris			

O NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None	None	None	None
Waterfall/cascade		Unvegetated mid-channel bars	
Torrential flow (rapid)		Vegetated mid-channel bars	
Laminar flow (run/ glide)		Stature island(s)	
Stale flow (stagnant)		Unvegetated side bar	
Exposed bedrock		Vegetated side bar	
Exposed bedrock		Unvegetated side bar	

DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 300m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total tick "none" where appropriate

None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 1 Outfalls = 4

S EVIDENCE OF RECENT MANAGEMENT Obvious signs (tick box(es))

BANKS	L	R	CHANNEL
None			None
Reinforcing			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

T CHOSED CHANNEL (tick one box only)

Is 33% or more of the channel over 300m checked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es)) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Small, heavily shaded, culverted under road bridge. Polluted water. Low flow. No obvious vegetation. No obvious bank features.

W SPECIAL FEATURES (eg. obvious, adjacent habitats of high interest, incidental sightings)

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Y TIME TAKEN (in minutes)

1 h 20

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RPA NORTH WEST REGION, NICHOL FAIRCLOUGH HOUSE, WARRINGTON, WY4 7HE.

HELPLINE NUMBERS: PETER FOX 0121 214600 (MAY 1994-95), ANDREW BROOKES 0121 214600 (MAY 1995-96)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B FIELD SURVEY DETAILS Complete all questions.

Site number: 320 River CLAY Mid-section grid reference if different from designated site: _____
 Grid Reference: S6 665 157 Date 19.12.1994 Sian time: 15.20 Surveyor name: J. B. C. BURRILL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

☐ Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural')

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/catastrophic ☐ riffle pool ☐ step-pool cascade ☒ approximately laminar ☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

G TEN SPOT CHECKS (in 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G.1 PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (see entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S
LEFT BANK	S	S	S	S
RIGHT BANK	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% area) or J (present) if appropriate)

	B	U	S	C
NONE (tick as appropriate)				
Likewise/mosses				
Emergent herbs				
Emergent reeds/sedges				
Floating-leaved				
Free-floating				
Amphibious				
Submerged				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J LAND USE WITHIN 50m OF RIVER (tick one box or estimate percentage banklength if present)

	L	R
Broadleaf/woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L BANK PROFILES WITHIN 50m (tick one box or estimate percentage banklength if present)

	L	R
Natural/unmodified		
Vertical/reduced		
Vertical + lee		
Step (> 45°)		
Grads		
Composite		
Artificial/unmodified		
Recessed		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - lee only		
Artificial two-stage		
Peached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

	Left	Right
None		
Isolated/heathered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of	Unvegetated Point Bars	Vegetated Point Bars
Riffles			
Pools			
Point bars			
Unvegetated mid-channel bars			
Vegetated mid-channel bars			
Alfalfa islands			
Unvegetated side bars			
Vegetated side bars			
Artificial			

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	2.5	Bank full width (m)	3.25
Bank height if different (m)	2.5	Water width (m)	2.0
Embanked height (m)		Water depth (m)	0.2
Bank height if different (m)			
Embanked height (m)			

Bed material at site is: consolidated ☐ chest algal growth compact, stable
 unconsolidated ☒ chest fresh clean gravel, easily dislodged, loose
 unknown ☐ invertebrate or not visible (eg. turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

S EVIDENCE OF RECENT MANAGEMENT Obvious signs (tick box(es))

	BANKS	CHANNEL
None		
Revetting		
Bank-mowing		
Enhancement		
Revetting		
Dredging		
Woodcutting		
Enhancement works		

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es)) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

A uniform streambed, with a few large stones. Right bank riparian zone a dense woodland, with a few tall trees. Left bank grassy with tall reeds.

W SPECIAL FEATURES (tick box(es)) No need to estimate abundance

Incidental sightings of high water: ☐

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Y TIME TAKEN (in minutes) 35 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 10A NORTH WEST CROWN, NICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. TELEPHONE NUMBERS: PETER FOX 731-2150, PAUL HAVEN 731-4111, ANDREW BROOKS 731-3311

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SWEEP-UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER (Use E (2-33% banklength) or U (present))

Broads/lowland woodland	<input checked="" type="checkbox"/>	Bag, marsh, fen	<input checked="" type="checkbox"/>
Coniferous plantation	<input checked="" type="checkbox"/>	Improved/semi-improved grass	<input checked="" type="checkbox"/>
Moorland/heath	<input checked="" type="checkbox"/>	Tilled land	<input checked="" type="checkbox"/>
Scrub/rough pasture	<input checked="" type="checkbox"/>	Suburban/urban development	<input checked="" type="checkbox"/>

LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 0 Right bank None ☐ Banklength % = 5

BANK PROFILES WITHIN 500m (Use E (2-33% banklength) or U (present))

Natural/unmodified	<input checked="" type="checkbox"/>	Artificial/modified	<input checked="" type="checkbox"/>
Vertical/undercut	<input checked="" type="checkbox"/>	Re-sectioned	<input checked="" type="checkbox"/>
Vertical + toe	<input checked="" type="checkbox"/>	Reinforced - whole bank	<input checked="" type="checkbox"/>
Step (> 45°)	<input checked="" type="checkbox"/>	Reinforced - top only	<input checked="" type="checkbox"/>
Gentle	<input checked="" type="checkbox"/>	Reinforced - toe only	<input checked="" type="checkbox"/>
Composite	<input checked="" type="checkbox"/>	Artificial two-stage	<input checked="" type="checkbox"/>
		Poached	<input checked="" type="checkbox"/>

EMBANKMENTS (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 6 Right bank None ☐ Banklength % = 6

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

Trees	Left	Right	Associated Features	None	Present
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Overhanging boughs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Exposed bankside roots	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Woody debris	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of Riffles = 3	Pool = 3	Unvegetated Point Bars = 1	Vegetated Point Bars = 1
Waterfall/cascade	<input checked="" type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>
Territorial flow (rapid)	<input checked="" type="checkbox"/>	Vegetated mid-channel bars	<input checked="" type="checkbox"/>
Laminar flow (run/tide)	<input checked="" type="checkbox"/>	Mature island(s)	<input checked="" type="checkbox"/>
Stable flow (slack)	<input checked="" type="checkbox"/>	Unvegetated side bar	<input checked="" type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	Vegetated side bar	<input checked="" type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	Artificial	<input checked="" type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK	
Bankfull height (m)	0.6	Bankfull width (m)	4.0
Bank height if different (m)	0.6	Water width (m)	2.0
Embanked height (m)	—	Water depth (m)	0.1
Bank height if different (m)	—	Embanked height (m)	—

Bed material at site is: consolidated ☒ check: algal growth compact, stable
unconsolidated ☒ check: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (e.g. buried under silt)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☐ Number of Culverts = 1 Weirs = 2 Bridges = 2 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	Left	Right	CHANNEL
Re-sectioning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Bank-mowing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging
Enhancement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wood-cutting
			Enhancement work

CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if spot check representative of site at a photo)

Cloved a steep pool cascade - mostly due to large no of flat boulders & rocks which are characteristic of the limestone geology.

SPECIAL FEATURES (tick one box only)

Small mill pond along side river (not shown on map)

RIVER TYPE (tick one box only)

Number (1-14) ☒ Name of them ☐

THE TANNER

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HOLDING NUMBERS: PETER FOX 7-21-3148; PAUL RAYEN 7-18-4341; ANDREW BROOKES 7-25-5717

(21, 22)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 334 River: RIBBLE Mid-section grid reference if different from designated site: 56-14-065

Date: 12.07.1994 Start time: 16.00 Surveyor name: N. PRIEST & R. KENNEDY

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

PREDOMINANT CHANNEL FORM (tick one box only)

<input type="checkbox"/> vee <input checked="" type="checkbox"/> concave/bowl <input type="checkbox"/> stepped valley floor (terraced) <input type="checkbox"/> symmetrical <input type="checkbox"/> asymmetrical <input type="checkbox"/> gorge	<input type="checkbox"/> predominantly culverted <input type="checkbox"/> open, but bed or banks predominantly artificial (e.g. box reinforced) <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/> open, but predominantly artificially dug (e.g. mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input checked="" type="checkbox"/> no obvious modification (semi-natural)
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NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ step ☐ step-pool cascade ☒ approximately laminar ☐ impounded ☐

predominantly due to geology & not slope

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

SPOT CHECKS (at 50m intervals)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	BR	EA	EA	EA	BR	BR	NV	NV	NV
- bank modification (one entry only)	NO	RI	NO	NO	NO	RI	RI			
- bank feature(s)	SC	NO	NO	SC	SC	NO	NO			
CHANNEL										
Predominant channel substrate (one entry only)	CO	BO	CO	BO	BO	CO	BO			
Predominant flow type (one entry only)	AL	PL	RF	AL	TW	TW	TW			
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	CV	CV	CV
- channel feature(s)	RO	NO	RO	RO	RO	RO	RO	CV	CV	CV
RIGHT BANK										
Predominant bank material (one entry only)	EA	BR	BR	EA	EP	BR	EA			
- bank modification (one entry only)	NO	RI	RI	NO	NO	RI	NO			
- bank feature(s)	NO	NO	NO	SC	VB	NO	NO			

VEGETATION STRUCTURE (to be assessed over a 10m wide transect) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	C	NO	NO	S	NO		
LEFT BANK	S	U	C	C	C	B	C		
RIGHT BANK	S	U	C	C	S	U	C		
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	C	NO	NO	C	NO	NO	NO

VEGETATION TYPES (tick one box only)

NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Liverwort/mosses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent herbs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent reeds/sedges	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Floating-leaved	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Free-floating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Amphibious	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Submerged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Filamentous algae	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Use end column for overall assessment over 300m (use E or A)

14.15.16

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 335 River: SE245041 Mid-section grid reference if different from designated site: Dike

Date: 17.5.1994 Start time: 16.45 Surveyor name: N. CRIEVE & E. ARMITAGE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ Vee ☐ concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

IS THERE A FUNCTIONING NAVIGATION? (tick one box only)

No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel, within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	CL	EA	EA	EA	EA	BR	ER
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	RI	RI
- bank feature(s)	NO	NO	NO	SC	SC	SC	SC	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CO	SI	CO	GP	GP	GP	GP	GP	GP	GP
- channel modification(s)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	BR
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	RI
- bank feature(s)	SC	NO	SC	VP	SC	SC	SC	SC	SC	NO

VEGETATION STRUCTURE (to be assessed on each bank, side by side) Fill in each box with one entry only

H = bare U = uniform S = simple C = complex Refer to spot-check key

	H	U	S	C	S	NO
LEFT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	C	C
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	S	C	C

CHANNEL VEGETATION TYPES (fill in following boxes with one entry, use R, S, U, C, NO as appropriate)

	R	S	U	C	NO
NONE (tick as appropriate)					
Liverworts/mosses					
Emergent herbs					
Emergent reeds/sedges					
Floating-leaved					
Free-floating					
Amphibious					
Submerged					
Filamentous algae					

Use end column for overall assessment over 500m (use E or V)

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER (tick one box only)

	L	R
Broadleaf/deciduous woodland		
Coniferous plantation		
Moorland/heath		
Scrub/heath pasture		
Ag. marsh, fen		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Banklength % = 55 Right bank None ☐ Banklength % = 60

BANK PROFILES WITHIN 50m OF RIVER (tick one box only)

	L	R
Natural/undisturbed		
Vertical/undisturbed		
Vertical + toe		
Steep (> 45°)		
Graded		
Compacted		
Artificial/modified		
Reinforced		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial toe-steps		
Poached		

EMBANKMENTS (tick one box only)

Left bank None ☐ Banklength % = _____ Right bank None ☐ Banklength % = _____

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		
Shading of channel		
Overhanging boughs		
Exposed buttress roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (tick one box per feature)

	Left	Right
Number of Ripples		
Waterfall/cascade		
Torrential flow (rapid)		
Laminar flow (run/glide)		
Static flow (stuck)		
Exposed bedrock		
Exposed boulders		
Unvegetated mid-channel bars		
Vegetated mid-channel bars		
Natural island(s)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

PHYSICAL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.8	Bankfull height (m)
Bank height if different (m)	2.0	Bank height if different (m)
Embanked height (m)		Embanked height (m)
	Water width (m)	0.5
	Water depth (m)	0.15

Bed material at site is: consolidated ☒ or: silt/clay growth compact, stable

unconsolidated ☐ or: chest fresh clean gravel, easily dislodged, loose

unknown ☐ or: incompressible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

OF ARTIFICIAL FEATURES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total tick 'none' where appropriate)

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	CHANNEL
None	None
Re-sectioning	Dredging
Bank-moving	Weed-cutting
Enhancement	Enhancement works
	State

CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NOISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (describe 1 spot check representative of the site)

Fresh meandering small stream for most of survey length. Occasional exposed boulders.

SPECIAL FEATURES (eg other, adjacent habitats of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river types and include which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-21-1140; PAUL RAVEN 7-10-4333; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

SECTION 1: BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

SECTION 2: FIELD SURVEY DETAILS (Complete all questions)

Site number: 336 River: Dike Mid-section grid reference if different from designated site: _____
 Grid Reference: SE 33038 Date: 25/5/1994 Start time: 14:45 Surveyor name: N. GRIFFIN & R. ARMITAGE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

SECTION 3: PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

SECTION 4: PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☒ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resctioned and/or realigned ☐ open, but predominantly artificially dug (eg null, leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

SECTION 5: NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

SECTION 6: PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately lamilar ☐ impounded ☐

SECTION 7: LAND USE WITHIN 500m OF RIVER (tick one box only)

Broads/limited woodland ☐ Bog, marsh, fen ☐ Coniferous plantation ☐ Improved/semi-improved grass ☐ Moorland/heath ☐ Tilled land ☐ Scrub/heath pasture ☐ Suburban/urban development ☐

SECTION 8: LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Backlength = 90 Right bank None ☐ Backlength = 90

SECTION 9: BANK PROFILES WITHIN 500m (tick one box only)

Natural/unmodified ☐ Artificial/modified ☐

Vertical/undercut ☐ Resectioned ☐ Vertical + toe ☐ Reinforced - whole bank ☐ Step (> 45°) ☐ Reinforced - top only ☐ Oculis ☐ Reinforced - toe only ☐ Composite ☐ Artificial two-stage ☐ Pooled ☐

SECTION 10: IMPROVEMENTS (tick one box only)

Left bank None ☐ Backlength = _____ Right bank None ☐ Backlength = _____

SECTION 11: EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES (tick one box per feature)

Shading of channel ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

SECTION 12: NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles: 10 Pools: 2 Unvegetated Point Bars: 0 Vegetated Point Bars: 2

Waterfalls/cascades ☐ Torrential flow (rapid) ☐ Laminar flow (run/glide) ☐ Stale flow (slack) ☐ Exposed bedrock ☐ Exposed boulders ☐

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐ Mature island(s) ☐ Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SECTION 13: CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight channel section, preferably across a riffle)

LEFT BANK CHANNEL RIGHT BANK

Bankfull height (m) 0.5 Bankfull width (m) 4.0 Bankfull height (m) 0.5

Bank height if different (m) 3.0 Water width (m) 2.75 Bank height if different (m) 0.5

Embankment height (m) 0.05 Water depth (m) 0.05 Embankment height (m) 0.05

Bed material at site is: consolidated ☒ chest: algal growth compact, stable (concrete) ☐ unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose ☐ unknown ☐ loose/irregular or not visible (eg mudflat water) ☐

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

SECTION 14: TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

SECTION 15: NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 2 Outfalls = 2

SECTION 16: EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS LEFT RIGHT CHANNEL

None ☒ Resectioning ☐ None ☐ Dragging ☐ Bank-mowing ☐ Weed-cutting ☐ Enhancement ☐ Enhancement works ☐ Slap ☐

SECTION 17: CHOSEN CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

SECTION 18: NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

SECTION 19: BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of all or a whole)

Mostly an artificial channel, with concrete bottom & slopes. One part possibly resectioned (?) near 100m.

SECTION 20: SPECIAL FEATURES (tick one box only)

NONE

SECTION 21: RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☐

SECTION 22: TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, KRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7331314; PAUL RAVEN 718443; ANDREW BROOKES 7336712

12, 13

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

SECTION 1: BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

SECTION 2: FIELD SURVEY DETAILS (Complete all questions)

Site number: 336 River: Dike Mid-section grid reference if different from designated site: _____
 Grid Reference: SE 33038 Date: 25/5/1994 Start time: 14:45 Surveyor name: N. GRIFFIN & R. ARMITAGE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

SECTION 3: PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

SECTION 4: PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☒ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resctioned and/or realigned ☐ open, but predominantly artificially dug (eg null, leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

SECTION 5: NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

SECTION 6: PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately lamilar ☐ impounded ☐

SECTION 7: LAND USE WITHIN 500m OF RIVER (tick one box only)

Broads/limited woodland ☐ Bog, marsh, fen ☐ Coniferous plantation ☐ Improved/semi-improved grass ☐ Moorland/heath ☐ Tilled land ☐ Scrub/heath pasture ☐ Suburban/urban development ☐

SECTION 8: LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Backlength = 90 Right bank None ☐ Backlength = 90

SECTION 9: BANK PROFILES WITHIN 500m (tick one box only)

Natural/unmodified ☐ Artificial/modified ☐

Vertical/undercut ☐ Resectioned ☐ Vertical + toe ☐ Reinforced - whole bank ☐ Step (> 45°) ☐ Reinforced - top only ☐ Oculis ☐ Reinforced - toe only ☐ Composite ☐ Artificial two-stage ☐ Pooled ☐

SECTION 10: IMPROVEMENTS (tick one box only)

Left bank None ☐ Backlength = _____ Right bank None ☐ Backlength = _____

SECTION 11: EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES (tick one box per feature)

Shading of channel ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

SECTION 12: NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles: 10 Pools: 2 Unvegetated Point Bars: 0 Vegetated Point Bars: 2

Waterfalls/cascades ☐ Torrential flow (rapid) ☐ Laminar flow (run/glide) ☐ Stale flow (slack) ☐ Exposed bedrock ☐ Exposed boulders ☐

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐ Mature island(s) ☐ Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SECTION 13: CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight channel section, preferably across a riffle)

LEFT BANK CHANNEL RIGHT BANK

Bankfull height (m) 0.5 Bankfull width (m) 4.0 Bankfull height (m) 0.5

Bank height if different (m) 3.0 Water width (m) 2.75 Bank height if different (m) 0.5

Embankment height (m) 0.05 Water depth (m) 0.05 Embankment height (m) 0.05

Bed material at site is: consolidated ☒ chest: algal growth compact, stable (concrete) ☐ unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose ☐ unknown ☐ loose/irregular or not visible (eg mudflat water) ☐

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

SECTION 14: TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

SECTION 15: NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 2 Outfalls = 2

SECTION 16: EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS LEFT RIGHT CHANNEL

None ☒ Resectioning ☐ None ☐ Dragging ☐ Bank-mowing ☐ Weed-cutting ☐ Enhancement ☐ Enhancement works ☐ Slap ☐

SECTION 17: CHOSEN CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

SECTION 18: NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

SECTION 19: BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of all or a whole)

Mostly an artificial channel, with concrete bottom & slopes. One part possibly resectioned (?) near 100m.

SECTION 20: SPECIAL FEATURES (tick one box only)

NONE

SECTION 21: RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☐

SECTION 22: TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, KRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7331314; PAUL RAVEN 718443; ANDREW BROOKES 7336712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION *This information is being collected separately*

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS *Complete all questions*

Site number: 337 River Houghton Mid-section grid reference if different from designated site: Back
 Grid Reference: SE 443 058
 Date: 1.5.1994 Start time: 13.35 Surveyor name: J. Blackman
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle pool ☒ static ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	RI	RS	RS	RS	RS	RS	RS	RS	RS	RS
bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	AR	SI	SI	SI	CL	CL	EP	SI	SI	EP
Predominant flow type (one entry only)	AL	AL	AL	AL	RF	AL	AL	AL	AL	RF
channel modification(s)	CV	RS	RS	RS	RS	RS	RS	RS	RS	RS
channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	RI	RS	RS	RS	RS	RS	RS	RS	RS	RS
bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	B	S	S	C	S	S	S	S	U	U
RIGHT BANK	B	S	C	S	S	S	S	S	S	B
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or P (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

Use end column for overall assessment over 500m (use E or P)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER _____

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or P if present

	L	R		L	R
Broadleaf/mixed woodland			Beg. marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = _____ Right bank: None ☐ Banklength % = _____

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or P if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial to a stage		
			Peached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = _____ Right bank: None ☐ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		None	Present	E
None			E ≥ 33%			
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bankside roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

O. NATURAL CHANNEL FEATURES (Recent actual number of riffles, pools and point bars)

	None	Present		None	Present	E
Number of: Riffles = 17			Unvegetated Point Bars =			
Waterfall/cascade			Unvegetated mid-channel bars			
Torrential flow (rapids)			Vegetated mid-channel bars			
Laminar flow (run/glide)			Mature island(s)			
Stable flow (slack)			Unvegetated side bar			
Exposed bedrock			Vegetated side bar			
Exposed boulders			Artificial			

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P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 0.7	Bankfull width (m) 2.0	Bankfull height (m) 0.7
Bank height if different (m) 1.6	Water width (m) 1.0	Bank height if different (m) 1.6
Embanked height (m) —	Water depth (m) 0.1	Embanked height (m) —

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
 unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☐ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = 4

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works
			State

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Observed a resectioned stream flowing through wheat field. Fresh spot check was culverted section within reach

W. SPECIAL FEATURES eg ex-banks, adjacent habitats of high interest, incidental sightings

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NWA NORTH WEST REGION, RICHARD FAIRCLOUGH HOME, WARRINGTON, WA10 1JG. HELP LINE NUMBERS: PETER FOX 01233 3140; PAUL KAY 01233 3140; ANDREW ARDREWS 01233 3140

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 356 River: ROSS RIVER Mid-section grid reference if different from designated site: _____
 Date: 19/5/1994 Start time: 9:30 Surveyor name: N. CRIEVE & R. KIRKINAGE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☒ V-shaped ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorgo

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification (semi-natural)

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☒ approximately laminar ☐ impounded

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 2 of 4

G. SPOT CHECKS: (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES: (to be assessed across channel, within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK: (tick one box only)	BC	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	BC	EA	EA	EA	EA	EA	EA	EA	EA	EA
Bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bank feature(s)	NO	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL: (tick one box only)	BC	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant channel substrate (one entry only)	BC	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant flow type (one entry only)	AL	RF	RF	RF	RF	RF	RF	RF	RF	RF
Channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Channel feature(s)	NO	RO	RO	RO	RO	RO	RO	RO	RO	RO
RIGHT BANK: (tick one box only)	BC	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	BC	EA	EA	EA	EA	EA	EA	EA	EA	EA
Bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bank feature(s)	NO	SC	SC	SC	SC	SC	SC	SC	SC	SC

I. VEGETATION STRUCTURE: (to be assessed over 10m wide zone; tick in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C
LEFT RIPARIAN ZONE: (if none, enter NO)	C	C	C	C
LEFT BANK:	S	B	U	S
RIGHT BANK:	S	B	U	S
RIGHT RIPARIAN ZONE: (if none, enter NO)	C	C	C	C

J. CHANNEL VEGETATION TYPES: (tick in relevant boxes with one entry only; tick in U, S, B, or C (if present))

	U	S	B	C
NON-B: (tick as appropriate)				
Litter/debris/mosses				
Emergent herbs				
Emergent reeds/sedges				
Flowering-leaved				
Free-floating				
Amphibious				
Submerged				
Filamentous algae				

Use red return for overall assessment over 500m (use B or A)

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

K. LAND USE WITHIN 50m OF RIVER: (tick in box or estimate percentage banklength if present)

	L	R
Broadleaf/mixed woodland	E	E
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Suburban/urban development		

L. NATURAL EXTENT OF RIPARIAN ZONE: (tick in box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

M. BANK PROFILES: (within 50m of river; tick in box or estimate percentage banklength if present)

	L	R
Natural/unmodified		
Vertical/vertical		
Vertical + toe		
Steep (>45°)		
Gentle		
Concave		
Artificial/unmodified		
Reinforced		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

N. EXHIBITMENTS: (tick in box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = 100 Right bank: None ☒ Banklength % = 100

O. NATURAL CHANNEL FEATURES: (tick one box per feature)

	Left	Right
None		
Isolated/marginal		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

P. ASSOCIATED FEATURES: (tick one box per feature)

	Left	Right
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

Q. NATURAL CHANNEL FEATURES: (tick one box per feature)

	Left	Right
Number of riffles		
Waterfall/cascade		
Torrential flow (rapid)		
Laminar flow (run/glide)		
Stale flow (slack)		
Exposed bedrock		
Exposed boulders		

R. EXHIBITMENTS: (tick one box per feature)

	Left	Right
Unvegetated point bar		
Unvegetated mid-channel bar		
Vegetated mid-channel bar		
Mixed island(s)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 4 of 4

S. CHANNEL DIMENSIONS AND INFLUENCES: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfall height (m)	0.5	Bankfall height (m)
Bank height if different (m)		Bank height if different (m)
Bank width (m)	3.8	Bank width (m)
Bank height (m)	0.2	Bank height (m)

T. BED MATERIAL AT SITE: (tick one box)

consolidated ☒ loose ☐ coarse ☐ fine ☐ silt/clay ☐ gravel ☐ sand ☐ mud ☐ organic ☐ other ☐ (tick one box)

U. LOCATION OF MEASUREMENTS: (tick one box)

riffle ☐ run or glide ☐ other ☒ (tick one box)

V. TRIBUTARIES: (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

W. NUMBER OF ARTIFICIAL FEATURES: (tick one box)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

X. EVIDENCE OF RECENT MANAGEMENT: (tick one box)

BANKS: None ☒ Resectioning ☐ Bank-mowing ☐ Enhancement ☐ CHANNEL: None ☒ Dredging ☐ Wood-cutting ☐ Enhancement works ☐ Silt ☐

Y. FLOODED CHANNEL: (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

Z. NOTABLE NUISANCE PLANT SPECIES: (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

AA. BRIEF DESCRIPTIVE SENTENCE: (tick one box)

Mostly step-pool cascade sequence - Spot checks good

AB. SPECIAL FEATURES: (tick one box)

None ☒ (tick one box)

AC. RIVER TYPE: (tick one box)

Number (1-14) ☐ None of them ☒

AD. TIME TAKEN: 10:30 - 11:30

AE. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STATED, THEN RETURN TO: PETER FOX, 104 NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS

AF. HELPLINE NUMBERS: PETER FOX 721-1140; PAUL RAVEN 710-4340; ANDREW BROOKES 725-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

SECTION 1: BACKGROUND INFORMATION

SWEEP-UP OVER 500m ☒ ENTER SITE NUMBER **332**

LAND USE WITHIN 500m OF RIVER: ☒ Broadleaf/mixed woodland ☒ E ☒ R ☒ Bag, marsh, fen ☒ L ☒ R

☒ Coniferous plantation ☒ E ☒ R ☒ Improved/semi-improved grass ☒ L ☒ R

☒ Moorland/heath ☒ E ☒ R ☒ Tilled land ☒ L ☒ R

☒ Scrub/rough pasture ☒ E ☒ R ☒ Suburban/urban development ☒ L ☒ R

SECTION 2: CHANNEL DIMENSIONS AND INFLUENCES

Left bank None ☒ Backlength 5 = Right bank None ☒ Backlength 5 =

SECTION 3: BANK PROFILES WITHIN 500m

Natural/undisturbed ☒ L ☒ R ☒ Artificial/undisturbed ☒ L ☒ R

Vertical/undisturbed ☒ L ☒ R ☒ Resectioned ☒ L ☒ R

Vertical + toe ☒ L ☒ R ☒ Reinforced - whole bank ☒ L ☒ R

Steep (>15%) ☒ L ☒ R ☒ Reinforced - top only ☒ L ☒ R

Gentle ☒ L ☒ R ☒ Reinforced - toe only ☒ L ☒ R

Composite ☒ L ☒ R ☒ Artificial two-stage ☒ L ☒ R

SECTION 4: CHANNEL FEATURES

Left bank None ☒ Backlength 5 = Right bank None ☒ Backlength 5 =

SECTION 5: TREES (Tick one box per bank)

None ☒ Left ☒ Right ☒ E ☒ R ☒ Shading of channel ☒ None ☒ Present ☒ E ☒ R

Isolated/stattered ☒ Left ☒ Right ☒ E ☒ R ☒ Overhanging boughs ☒ None ☒ Present ☒ E ☒ R

Regularly spaced, single ☒ Left ☒ Right ☒ E ☒ R ☒ Exposed bank-side roots ☒ None ☒ Present ☒ E ☒ R

Occasional clumps ☒ Left ☒ Right ☒ E ☒ R ☒ Underwater tree roots ☒ None ☒ Present ☒ E ☒ R

Semi-continuous ☒ Left ☒ Right ☒ E ☒ R ☒ Fallen trees ☒ None ☒ Present ☒ E ☒ R

Continuous ☒ Left ☒ Right ☒ E ☒ R ☒ Woody debris ☒ None ☒ Present ☒ E ☒ R

SECTION 6: NATURAL CHANNEL FEATURES

Number of riffles = 1 ☒ Pool = 1 ☒ Vegetated Point Bars = 1 ☒ Vegetated Point Bars = 1 ☒ None ☒ Present ☒ E ☒ R

Waterfall/cascade ☒ Left ☒ Right ☒ E ☒ R ☒ Unvegetated mid-channel bars ☒ None ☒ Present ☒ E ☒ R

Torrential flow (rapid) ☒ Left ☒ Right ☒ E ☒ R ☒ Vegetated mid-channel bars ☒ None ☒ Present ☒ E ☒ R

Laminar flow (run/glide) ☒ Left ☒ Right ☒ E ☒ R ☒ Mature island(s) ☒ None ☒ Present ☒ E ☒ R

Stale flow (slack) ☒ Left ☒ Right ☒ E ☒ R ☒ Unvegetated side bar ☒ None ☒ Present ☒ E ☒ R

Exposed bedrock ☒ Left ☒ Right ☒ E ☒ R ☒ Vegetated side bar ☒ None ☒ Present ☒ E ☒ R

Exposed boulders ☒ Left ☒ Right ☒ E ☒ R ☒ Artificial ☒ None ☒ Present ☒ E ☒ R

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SECTION 7: CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK ☒ CHANNEL ☒ RIGHT BANK ☒

Bankfull height (m) ☒ 0.5 Bankfull width (m) ☒ 5.8 Bankfull height (m) ☒ 0.5

Bank height if different (m) ☒ 0.9 Water width (m) ☒ 3.8 Bank height if different (m) ☒ 0.5

Embedded height (m) ☒ Water depth (m) ☒ 0.5 Embedded height (m) ☒

Bed material at site is: consolidated ☒ (check: algal growth compact, stable) ☒ unconsolidated ☒ (check: fresh clean gravel, easily dislodged, loose) ☒ unknown ☒ (check: inaccessible or not visible (eg turbid water)) ☒

Location of measurements is: riffle ☒ run or glide ☒ other ☒ (tick one box)

Significant tributaries within 500m length? No ☒ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (tick one box only) (No, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

None ☒ Number of Culverts = 0 ☒ Weirs = 0 ☒ Bridges = 1 ☒ Outfalls = 0 ☒

SECTION 8: EVIDENCE OF RECENT MANAGEMENT

BANKS ☒ L ☒ R ☒ CHANNEL ☒

None ☒ Resectioning ☒ Dragging ☒ Bank-mowing ☒ Wood-cutting ☒ Enhancement ☒ Enhancement works ☒ Stone ☒

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick one box) (No, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

Giant Hogweed ☒ Himalayan Balsam ☒ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (tick one box) (No, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

Muddy, deep pool, cascades, seasonal - 300m, check, good ☒ (check: 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

SPECIAL FEATURES (tick one box) (No, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

RIVER TYPING (tick one box) (No, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

Number (1-14) ☒ 1 ☒ None of them ☒

TIME TAKEN (tick one box) (No, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 731-3146; PAUL RAVEN 718-4341; ANDREW BROOKES 735-5712

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SECTION 9: BACKGROUND INFORMATION

Altitude (m) ☒ Slope ☒ Mean Annual Flow category (1-10) ☒

Solid geology ☒ Drift geology ☒ Platform category ☒

Distance from source (km) ☒

SECTION 10: FIELD SURVEY DETAILS

Site number: **332** River **RIVER LYN** Mid-section grid reference if different from designated site: **25 876**

Date: **9/5/1994** Start time: **12:00** Surveyor name: **N. GRIEVE & R. ARMITAGE**

Are conditions affecting survey? No ☒ Yes ☒ If yes, state ☒

Bed of river visible? No ☒ partially ☒ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☒ both banks ☒ channel ☒

SECTION 11: PREDOMINANT VALLEY FORM

☒ vee ☒ predominantly culverted ☒

☒ concave/bowl ☒ open, but bed or banks predominantly artificial (eg bar reinforced) ☒

☒ stepped valley floor (terraced) ☒ open, little or no obvious reinforcement, but resectioned and/or realigned ☒

☒ symmetrical ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☒

☒ asymmetrical ☒ not artificial, but dammed ☒

☒ gorgo ☒ no obvious modification ('semi-natural') ☒

SECTION 12: NAVIGATION

Is there a functioning navigation? No ☒ Yes ☒ Don't know ☒

SECTION 13: PREDOMINANT FLOW TYPE

torrential/whitewater ☒ riffle pool ☒ static ☒

step-pool cascade ☒ approximately laminar ☒ impounded ☒

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SECTION 14: TEN SPOT CHECKS (a 50m span)

Spot check 1 is at: upstream end ☒ downstream end ☒ of site (tick one box)

SECTION 15: PHYSICAL ATTRIBUTES

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

SECTION 16: SPOT-CHECK KEY

U = bare U = uniform S = simple C = complex R = refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO) ☒ C ☒ C ☒ C ☒ S ☒ C ☒ G ☒ C ☒ S ☒ S

LEFT BANK ☒ S ☒ B ☒ U ☒ U ☒ B ☒ S ☒ U ☒ B ☒ S

RIGHT BANK ☒ U ☒ U ☒ U ☒ B ☒ U ☒ S ☒ U ☒ B

RIGHT RIPARIAN ZONE (if none, enter NO) ☒ S ☒ C ☒ C ☒ C ☒ S ☒ C ☒ C ☒ NO

SECTION 17: CHANNEL VEGETATION TYPES

NONE (tick as appropriate) ☒ Liverworts/mosses ☒ E ☒ E ☒ E ☒ E ☒ E ☒ E ☒ E

Emergent herbs ☒

Emergent reeds/rushes ☒

Floating-leaved ☒

Free-floating ☒

Amphibious ☒

Submerged ☒

Filamentous algae ☒

Use end column for overall assessment over 500m (tick C or V)

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 2.0	Bank full width (m) 20	Bank full height (m) 2.0
Bank height if different (m) 5.0	Water width (m) 18	Bank height if different (m) 5.0
Embanked height (m) —	Water depth (m) —	Embanked height (m) —

Bed material at site is: consolidated ☐ clus: algal growth compact, stable
unconsolidated ☐ clus: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = **2** Outfalls = **3**

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> State

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☒ Yes ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Roselined river, but bank vegetation & riparian zone on left bank very well developed so appears quite natural.

W. SPECIAL FEATURES (eg ospreys, different habitats of high interest, incidental sightings)

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN 55 mins.

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL JAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 2m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	RI	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	SC	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CL	CL	NO	SI	NO	NO	NO	NO	NO	NO
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	TR	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	SC	SC	SC	SC	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide swath): Fill in each box with one entry only

S = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	NO	C	C	C	C	C
LEFT BANK	C	C	S	S	C	S	S	S	S	S
RIGHT BANK	C	C	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	NO	NO	NO	NO	S	S	S	S	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% bare) or V (percent) if appropriate)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses									✓	✓
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Use end column for overall assessment over 500m (use E or V)

(1, 2, 3, 4)

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A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 4-14 River: BALDWIN BROOK Mid-section grid reference if different from designated site: _____
 Grid Reference: _____
 Date: 9/5/1994 Start time: 15:00 Surveyor name: N. CREEVE & P. ACQUATONE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	CP	EA	EA	EA	EA	SA	EA	BR	
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	PS	SC	NO	NO	NO	SC	SC	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	CO	AP	PO	BE	SO	CO	AP	SI	CO
Predominant flow type (one entry only)	AL	RE	AL	RE	PL	PO	AL	AL	PL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	BE	BR	EA	EP	EA	CP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	EC	SC	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	NO	C	C	C	NO	NO	NO	NO
LEFT BANK	S	S	C	C	B	B	S	C	C	C
RIGHT BANK	C	B	C	U	S	B	C	B	C	C
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	C	NO	NO	C	NO	NO	C	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: E = emergent, S = submerged, F = floating-leaved, L = liverworts/mosses, N = none)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or S)

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ENTER SITE NUMBER: 414

J. LAND USE WITHIN 50m OF RIVER (tick one box per 50m stretch)

	L	R		L	R
Broadleaf/deciduous woodland			Box, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick one box per 50m stretch)

Left bank: None ☐ Banklength % = 40 Right bank: None ☐ Banklength % = 25

L. BANK PROFILES (WITHIN 50m OF RIVER, tick one box per 50m stretch)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/steep			Retained		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Coastal			Artificial two-stage		
			Poached		

M. BANK PROFILES (tick one box per 50m stretch)

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right		None	Present
Trees			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present
Number of riffles		
Number of pools		
Number of rapids		
Number of cascades		
Number of riffles		
Number of pools		
Number of rapids		
Number of cascades		

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P. CHANNEL DIMENSIONS AND INFLUENCES (measure at one site on a straight section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 0.8	Bankfull width (m) 4.8	Bankfull height (m) 0.8
Bank height if different (m) 0.5	Water width (m) 2.5	Bank height if different (m) 0.6
Embankment height (m) 0.5	Water depth (m) 0.15	Embankment height (m) 0.5

Bed material at site is: consolidated ☒ chosen: slight growth compact, stable
 unconsolidated ☐ chosen: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick, none, here, appropriate)

None ☒ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

	None	Present
BANKS		
None		
Revetting		
Bank-mowing		
Enhancement		
Channel		
None		
Dredging		
Weed-cutting		
Enhancement works		
State		

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present, or evidence)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (write 1-2 sentences representative of site as a whole)

Rifle-pool sequence (although riffles mostly on cobbles)

Spot check area

W. SPECIAL FEATURES (tick one box per feature)

None ☐ Present ☐

X. RIVER TYPING (Refer to photographs of river type and distance which resembles the river)

Number (1-14) 9 None of them ☐

Y. TIME TAKEN (tick one box)

None ☐ Present ☐

Z. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4340; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 505 River LY446 Mid-section grid reference if different from Grid Reference: 505M designated site:
Date: 5/1/1994 Start time: 16:15 Surveyor name: JASON SUNDY / PAUL (JFS) / (PJS)
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☒ entirely (tick one box)
Photographic general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

G. SPOT CHECKS (10m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (No bar marked across channel within 2m side zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	BR	GA	RL	GP	GI	GI	GA	GP	GP
- bank modification (one entry only)	NO	RI	NO	LS	RS	RS	RS	RS	RS	RS
- bank feature(s)	SC	TR	NO	LS	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GA	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RI	RL	RL	RL	RL	RL	RL	RL	RL	RL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	TR	TR	TR	TR	TR	TR	TR	TR	TR
RIGHT BANK										
Predominant bank material (one entry only)	GA	GP	GP	GP	GP	GP	GP	GP	GP	GP
- bank modification (one entry only)	NO	RI	NO	LS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	TR	NO	LS	NO	NO	NO	NO	NO	NO

I. VEGETATION STRUCTURE (No bar marked over a 10m wide stretch) Fill in each box with one entry only

U = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; tick B (in 10% area) or C (greater))

NONE (tick one appropriate)

Liverworts/mosses	
Emergent herbs	
Emergent reeds/sedges	
Flowering-leaved	
Free-floating	
Amphibious	
Submerged	
Filamentous algae	

Use end column for overall assessment over 500m (see F or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

K. CHANNEL DIMENSIONS AND INFLUENCES

L. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☒ chest algal growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily displaced, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

M. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

N. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total (tick 'none' where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

O. EVIDENCE OF RECENT MANAGEMENT (Observe, report tick box(es))

BANKS	CHANNEL
None <input type="checkbox"/>	None <input type="checkbox"/>
Revetting <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement work <input type="checkbox"/>

P. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

Q. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Invasive Knotweed ☐

R. BRIEF DESCRIPTIVE SENTENCE (Draft if spot checks representative of site as a whole)

S. SPECIAL FEATURES (eg barriers, adjacent habitats of high interest, technical sightings)

T. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of these ☐

U. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 104 NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HH. TELEPHONE NUMBERS: PETER FOX 7-21-1146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5111

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

V. BANK PROFILES WITHIN 500m (tick B (in 10% banklength) or C (if present))

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 10

W. BANK PROFILES (tick one box per bank)

Natural/unmodified	L	R	Artificial/unmodified	L	R
Vertical/undrained			Revetting		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

X. EMBANKMENTS (tick one box per bank)

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 10

Y. EXTENT OF TREES AND ASSOCIATED FEATURES

Z. TREES (tick one box per bank)

Left	Right	ASSOCIATED FEATURES	None	Percent
None		Shading of channel		
Isolated/scattered		Overhanging boughs		
Regularly spaced, single		Exposed bankside roots		
Occasional clumps		Underwater tree roots		
Semi-continuous		Fallen trees		
Continuous		Woody debris		

AA. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None	None	None	None
Waterfall/cascade		Unvegetated mid-channel bars	
Torrential flow (rapids)		Vegetated mid-channel bars	
Laminar flow (pool/glide)		Midstream island(s)	
Still flow (slack)		Unvegetated side bar	
Exposed bedrock		Vegetated side bar	
Exposed boulders		Artificial	

25 April 1994 **SUYER HABITAT SURVEY 1994 IDENTIFICATION FORM** Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

PLOT CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	0.55	Bankfull width (m)	1.75	Bankfull height (m)	0.25
Bank heights if different (m)	—	Water width (m)	1.00	Bank heights if different (m)	—
Embedded height (m)	—	Water depth (m)	0.05	Embedded height (m)	—

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
 nonconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
 well-sorted ☐ incompressible or not visible (e.g. boulders, water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

OCCUPANCY/TALUSARIES (tick one box only) _____

Significant tributary within 500m length? No ☐ Yes ☒

RIVER NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick none, where appropriate)

Name <input type="checkbox"/>	Number of	Cutways =	Weirs =	Bridges =	Dams <input type="checkbox"/>	Outlets =
						1

EVIDENCE OF RECENT MANAGEMENT (check all that apply; tick none if not present)

	L	R	CHANNEL
BANKS			
Name	<input type="checkbox"/>	<input type="checkbox"/>	Name <input type="checkbox"/>
Revegetation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input checked="" type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/>
			State <input type="checkbox"/>

CROPPED CHANNEL _____

Is 35% or more of the channel over 500m (shed off with vegetation)? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick boxes; if need to extend channels 1-5-5112)

Giant Hog-weed <input type="checkbox"/>	Himalayan Balsam <input type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>
---	---	--

BRIEF DESCRIPTIVE SENTENCE: Underline if you think representative of site as a whole

Small, meandering, inactive, rocky brook in mature broad-leaved woodland
evidence of recent deepening of channel & narrowing of banks at top

SPECIAL FEATURES (if above, adjacent habitat of high interest; botanical significance)

RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ Name of them ☐

TIME TAKEN _____ 0.90 hrs

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE
TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAYVEN 7-18-0243; ANDREW BROOKES 7-25-5112

29 April 1994 **RIVER HABITAT SURVEY, 1994** **Page 2**

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 0.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	G4	G4	G4	G4	G4	M	B	C	E	E
- bank modification (see entry only)	R5	N0	N0	N0	R5	N0	N0	N0	N0	N0
- bank feature(s)	N0	N0	N0	S6	N0	E6	N0	S6	N0	N0
CHANNEL										
Predominant channel substrate (see entry only)	S4	S4	S4	S4	S4	S4	S4	S4	S4	S4
Predominant flow type (see entry only)	AL	P0	P0	AL	RF	RF	RF	P0	AL	P0
- channel modification(s)	R5	N0	N0	N0	R5	N0	N0	N0	N0	N0
- channel feature(s)	N0	N0	JN	N0	N0	N0	N0	N0	N0	N0
RIGHT BANK										
Predominant bank material (see entry only)	G4	G4	C	G4	G4	G4	G4	G4	G4	G4
- bank modification (see entry only)	R5	N0	N0	N0	N0	N0	N0	N0	N0	N0
- bank feature(s)	N0	N0	S6	N0	N0	E6	N0	S6	S6	N0
VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; Fill in each box with one entry only)										
H = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter N0)	C	C	C	N0	N0	C	C	C	C	S
LEFT BANK	B	S	B	U	U	S	S	S	S	S
RIGHT BANK	B	S	S	C	S	C	S	S	S	C
RIGHT RIPARIAN ZONE (if none, enter N0)	C	C	C	C	C	C	C	C	C	C
CHANNEL VEGETATION TYPES (fill in preferred herbs with one entry; Use B (in S) or aerial or ground)										
NONDI (pick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/bushes										
Floating-leaved										
Free-floating										
Anghikinas										
Submerged										
Filamentous algae										

Use red columns for overall assessment over 500m long U or V.

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. CHANNEL DIMENSIONS AND INFLUENCES

1.1 CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1-2.5	Bank full width (m)	11-200	Bank full height (m)	1-2.5
Bank height if different (m)	0-7.5	Water width (m)	2-2.5	Bank height if different (m)	0-7.5
Embankment height (m)		Water depth (m)	0-7.5	Embankment height (m)	

Bed material at site is: consolidated ☐ coarse: silt/growth compact, stable
unconsolidated ☒ fines: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

1.2 TRIBUTARIES (tick one box only) Significant tributary within 500m length? No ☒ Yes ☐

1.3 NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

1.4 EVIDENCE OF RECENT MANAGEMENT (tick box(es))

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	Name <input checked="" type="checkbox"/>
Resectioning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> Stone <input type="checkbox"/>

1.5 CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

1.6 NOTABLE NUISANCE PLANT SPECIES tick box(es). No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

1.7 BRIEF DESCRIPTIVE SENTENCE (Indicate if you think representative of the site as a whole)

GRATELY WEEDING STEAM TRAIL WITH DRY-CHOP PATTLES.

1.8 SPECIAL FEATURES eg ashwini, adjacent habitats of high interest, incidental sightings of protected species

1.9 RIVER TYPING Refer to photographs of river types and indicate which resembles the site most

Number (1-14) ☐ None of them ☐

1.10 TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAMPED, THEN RETURN TO:
PETER FOX, INMOUTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH
HELPING NATURE'S PETER FOX 01744 674461 FAX 01744 674462 ANDREW BROOKS 01744 674463

29 April 1994 **WATER RIVER HABITAT SURVEY: 1994 VERIFICATION** Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G R S PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BR	EA	RR	GP	EA	EA	EA	CA	EA	CA
- bank modification (one entry only)	RT	NO	RT	NO	NO	NO	NO	UD	UD	NO
- bank features(s)	NO	NO	NO	EC	NO	NO	SB	SC	GC	SC
CHANNEL										
Predominant channel substrate (one entry only)	GP	CO	CO	GP	GP	GP	GP	PP	GP	GP
Predominant flow type (one entry only)	RF	AL	AL	AL	RF	RF	RF	AL	RF	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	MB	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GR	EA	BC	EA	EA	EA	GP	EA	GA	EA
- bank modification (one entry only)	NO	VO	NO	NO	NO	NO	RS	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	SC	NO	NO	SC	S3	SC

H I J VEGETATION STRUCTURE (to be assessed over a 1m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	B	U	U	S	U	U	U
RIGHT BANK	S	U	U	S	U	S	U	U	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	S	NO	U	NO	NO	NO	NO

I J K CHANNEL VEGETATION TYPES (list all types with one entry; use B (2-3) with S (vertical) if present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Emergent macrophytes	✓	✓	✓					✓	✓	✓
Emergent herbs										
Emergent reeds/sedges			✓							
Floating-leaved										
Free-floating										
Ambulans										
Submerged										

Fill in spot-check key

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CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.5	Bank full width (m)	7.75	Bank full height (m)	1.25
Bank height if different (m)	0	Water width (m)	7.0	Bank height if different (m)	0
Embanked height (m)		Water depth (m)	0.85	Embanked height (m)	

Bed material at the site: consolidated ☐ clast: algal growth compact, stable
 unconsolidated ☒ clast: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q1: TRIBUTARIES (tick one box only) ☒ Yes ☐ No

Significant tributary within 500m length? No ☐ Yes ☒

R1: NUMBER OF ARTIFICIAL FEATURES (by tally method, then total tick "none" where appropriate)

None <input checked="" type="checkbox"/>	Number of	Chertens =	Wells =	Bridges =	Outfalls =
54: EVIDENCE OF RECENT MANAGEMENT (tick all that apply)					
BANKS	L	R	CHANNEL		
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>		
Reseeding	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>		
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>		
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> Stone <input type="checkbox"/>		
T-X: CHOKED CHANNEL					
Is 33% or more of the channel over 500m choked with vegetation? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>					
U: NOTABLE NUISANCE PLANT SPECIES (tick box(es) (do not tick to estimate abundance))					
Giant Hogweed <input type="checkbox"/>	Hemlock Water Thistle <input type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>			
V: BRIEF DESCRIPTIVE SUMMARY (indicate if spot checks representative of the site when ticked)					
SPOT CHECKS ARE REPRESENTATIVE: A NUMBER OF SMALL TUBES WERE PRESENT IN CHANNEL LEAVING WATER LEVEL SIGNIFICANTLY LOWER					
W: SPECIAL FEATURES (e.g. obvious, adjacent habitats of high interest; ecological significance)					
FLOODPLAIN ON SITE					
X: RIVER TYPING (refer to photographs of river types and indicate which resembles the site)					
Number (1-14) <input type="checkbox"/> None of them <input type="checkbox"/>					

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A BACKGROUND INFORMATION This information is being collected separately.

Altitude(m)	Slope	Mean Annual Flow category (1-10)
Solid geology	Drift geology	Planform category
Distance from source(km)		

B FIELD SURVEY DETAILS Complete all questions

Site number: 567 River: TANAY Mid-section grid reference if different from designated site:

Grid Reference: 1

Date: 3.1.1994 Start time: 1430 Surveyor name: P.M. HADJILAKIS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____




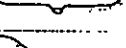
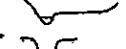

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C PREDOMINANT VALLEY FORM (tick one box only)

	<input type="checkbox"/> vee
	<input checked="" type="checkbox"/> concave/bowl
	<input type="checkbox"/> stepped valley floor (terraced)
	<input type="checkbox"/> symmetrical
	<input type="checkbox"/> asymmetrical
	<input type="checkbox"/> gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

- predominantly culverted ☐
- open, but bed or banks predominantly artificial (eg bar reinforced) ☐
- open, little or no obvious reinforcement, but restocked and/or realigned ☐
- open, but predominantly artificially dug (eg mill leat, dyke) ☐
- not artificial, but dammed ☐
- no obvious modification ('semi-natural') ☒

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

Jorrapal white water	(flood pool)	Stagnant
Flow over rocks	Approximately laminar	Impounded

[illegible]

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Planform category
Distance from source(km)

B FIELD SURVEY DETAILS Complete all questions

Site number: 570 River: Roden Mid-section grid reference if different from designated site:
Grid Reference:
Date: 13/5/1994 Start time: 7:30 Surveyor name: John Gurn + Hilary DeWitt (CIFO)
Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

☐ Vee
☒ concave/bowl
☐ stepped valley floor (terraced)
☐ symmetrical
☐ asymmetrical
☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg bar reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg. mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 3m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EP	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	EC	SC	N	N	N	N	N	N	N
CHANNEL										
Predominant channel substrate (one entry only)	N	GP	N	SA	N	N	SI	SI	N	N
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	N	N	N	N	N	N	N	N	N	N
- channel feature(s)	N	N	N	N	N	N	N	N	N	N
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N

H VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only

R = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N
LEFT BANK	B	S	S	S	S	S	S	S	S	S
RIGHT BANK	B	B	B	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (present))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Flamboyant algae										

Use end column for overall assessment over 500m (use E or /)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER 570

J LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or / if present

	L	R		L	R
Broadleaf/mixed woodland			Brk. marsh, fch		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 50 Right bank None ☒ Banklength % =

L BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Recessioned		
Vertical + toe			Reinforced - whole bank		
Sleep (> 25%)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composita			Artificial two-stage		
			Peached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present	E
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bankside roots			
Occasional clumps			Underwater tree roots			
Semi-continuous			Fallen trees			
Continuous			Woody debris			

O NATURAL CHANNEL FEATURES Record actual number of riffle, pool and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (lick)				
Exposed bedrock				
Exposed boulders				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.25	Bank full width (m)	10.00
Bank height if different (m)		Water width (m)	7.00
Embanked height (m)		Water depth (m)	2.10
Bank height if different (m)		Embanked height (m)	

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

	L	R	CHANNEL
BANKS			
None			
Recessioning			
Bank-mowing			
Enhancement			

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Inactive slow flowing river. Extensive poaching by cattle.

W SPECIAL FEATURES eg oxbow, adjacent habitats of high interest, incidental sightings

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

Y TIME TAKEN 55 min

Z CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1NE
TELEPHONE NUMBERS: PETER FOX 01246 2146; PAUL RAYEN 01246 4331; ANDREW BROOKES 01246 5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drain geology _____ Planform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 571 River TGT2 Mid-section grid reference if different from designated site: _____
 Grid Reference: 53647262
 Date: 5/1/1994 Start time: 11:10 Surveyor name: J.A. Smith / P. H. Jones

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dog (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

G. CHANNEL DIMENSIONS: To be measured at one site on a straight reach from section, preferably across a riffle.

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 0.75	Bankfull width (m) 6.50	Bankfull height (m) 0.75
Bank height if different (m) 3.50	Water width (m) 5.70	Bank height if different (m) 3.50
Embankment height (m) —	Water depth (m) 0.60	Embankment height (m) —

Bed material at site is: consolidated ☒ clay: silt growth compact, stable
 unconsolidated ☐ clay: fresh clean gravel, easily dislodged, loose
 unknown ☐ incohesive or not visible (eg. boulders, etc)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

H. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

I. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: Tick 'none' where appropriate.

None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 1 Outfalls = 1

J. EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	CHANNEL
None <input type="checkbox"/>	None <input type="checkbox"/>
Revetting <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wood-casting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

K. CHOKED CHANNEL

Is 25% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

L. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance.

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

M. BRIEF DESCRIPTIVE SENTENCE (Use the 10 spot checks representative of the site as a whole)

Water 0.6-0.8m deep, fast flowing, (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s), (1-2m/s)

N. SPECIAL FEATURES (eg. obstructions, artificial habitats of high interest, incidental sightings)

O. RIVER TYPING Refer to photographs of river types and indicate which resembles the site.

Number (1-14) 15 None of them ☐

P. TIME TAKEN (tick one box only)

50 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431114; FAX: 01925 431115; ANDREW BROOKES 7-25-5112.

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Q. TEN SPOT CHECKS (to 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

R. PHYSICAL ATTRIBUTES (to be assessed across channel within 1m wide lane)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SH	SH	SH	SH	SH	SH	SH	SH	SH	SH
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
- channel feature(s)	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
RIGHT BANK										
Predominant bank material (one entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

S. VEGETATION STRUCTURE (to be assessed over 10m wide transect) Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	HL	HL	HL	HL	HL	HL	HL	HL	HL	HL
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

T. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; tick B (to 25% area) or 7 (percent))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Emergent macrophytes										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (see E or F)

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TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 2m wide zone)

Fill in each box before moving onto II and at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	CA	EA	CA	EA	CA	EA	CA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	NO	NO	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SA	GP	GP	SA	SA	SA	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	NO	RS	RS
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	CA	EA	EA	EA	EA	EA	CA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	NO	SC	SC	SC

II VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	S	U	S	S	U	S	S	S	S	S
RIGHT BANK	S	S	B	U	B	U	S	U	B	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	U	NO	NO	NO	U	S	U	NO

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 13% area) or ✓ (frequent)

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/roddes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged - <i>Ceratophyllum</i> sp.										
Filamentous algae										

Use end column for overall assessment over 500m line E or W

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DIMENSIONS AND INFLUENCES					
CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle:					
LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	0.80	Bank full width (m)	3.50	Bank full height (m)	0.80
Bank height if different (m)	1.20	Water width (m)	2.30	Bank height if different (m)	1.20
Embanked height (m)	—	Water depth (m)	0.30	Embanked height (m)	—
Bed material at site is:		<input type="checkbox"/> consolidated <input type="checkbox"/> clays: silt/growth compact, stable <input checked="" type="checkbox"/> unconsolidated <input checked="" type="checkbox"/> clays: fresh clean gravel, easily dislodged, loose <input type="checkbox"/> unknown <input type="checkbox"/> inaccessible or not viable (eg turbid water)			
Location of measurements is: riffle <input type="checkbox"/> run or glide <input checked="" type="checkbox"/> other <input type="checkbox"/> (tick one box)					
Q. TRIBUTARIES (tick one box only)					
Significant tributary within 500m length? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>					
R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate					
None <input checked="" type="checkbox"/> Number of Culverts = — Weirs = — Bridges = — Outfalls = —					
S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)					
BANKS		CHANNEL			
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	<input type="checkbox"/>	
Restoration	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input checked="" type="checkbox"/>	
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>	
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>	State
T. CHOKED CHANNEL					
Is 33% or more of the channel over 500m choked with vegetation? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>					
U. NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance					
Giant Hogweed <input type="checkbox"/> Himalayan Balsam <input checked="" type="checkbox"/> Japanese Knotweed <input type="checkbox"/>					
V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)					
The whole channel is 20m wide and 2m deep. The banks are 1.2m high. The water is clear and the bed is gravel. The channel is in good condition. Spot					
W. SPECIAL FEATURES eg bawds, adjacent habitats of high interest, incidental sightings					
X. RIVER TYPING Refer to photographs of three types and indicate which resembles the site					
Number (1-14) <input checked="" type="checkbox"/> None of them <input type="checkbox"/>					
Y. TIME TAKEN					
55 mins					

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TF
 TEL: 01925 431240; FAX: 01925 431241; E-MAIL: p.fox@nra.gov.uk

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E = 3% SWEEP-UP OVER 100m **ENTER SITE NUMBER** **68**

LAND USE WITHIN 50m OF RIVER: Use E (x 33% banklength) or V if present

	L	R		L	R
Broadleaf/mixed woodland	E	✓	Bog, marsh, fen		
Coniferous plantation	✓		Improved/wild-improved grass		
Moorland/heath			Tilled land		
Sand/grough pasture	E	F	Suburban/urban development		

K = LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = **50%** Right bank: None ☐ Banklength % = **20%**

L = BANK PROFILES WITHIN 100m Use E/F (x 33% banklength) or V if present

Natural/unmodified	L	R	Artificially modified	L	R
Vertical/undercut	77	✓	Reclaimed		
Vertical + toe	7	F	Reinforced - w/bale bank		
Slope (> 45°)	7		Reinforced - top only		
Graze	7		Reinforced - toe only		
Composite	7		Artificial to estuary		
			Pierced		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	E > 33%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of:	Riffles = 9	Pools = 4	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Waterfall/weir/cascade	None	Present	None	Present
Terraced flow (rapid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unvegetated mid-channel bar	<input type="checkbox"/>
Explosive flow (run/slides)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vegetated mid-channel bar	<input type="checkbox"/>
Stable flow (river)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
			Vegetated side bar	<input type="checkbox"/>

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3. CHANNEL DIMENSIONS AND INFLUENCES

3.1. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably with a riffle

LEFT BANK		CHANNEL	RIGHT BANK		
Bank full height (m)	1.75	Bank full width (m)	7.75	Bank full height (m)	1.75
Bank height if different (m)	1.70	Water width (m)	4.70	Bank height if different (m)	1.70
Embankment height (m)		Water depth (m)	0.50	Embankment height (m)	

Bed material at site is:

consolidated ☒ chest: silt/clay growth compact, stable

unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg. buried under stones)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

3.2. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

3.3. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then tally up "none", where appropriate)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

3.4. EVIDENCE OF RECENT MANAGEMENT, (tick one box only)

BANKS	L	R	CHANNEL	
Name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Name	<input checked="" type="checkbox"/>
Revetting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-railing	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

3.5. CHOKER CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

3.6. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if more than one is present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

3.7. BRIEF DESCRIPTIVE SENTENCE (describe 100m stretch of river, or 100m of a whole river)

Upstream treed river - with step-pool cascade flow problem - steep gradient


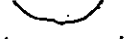


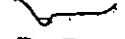

3.8. SPECIAL FEATURES (if rocky, include location of high water level indicator, if rocky, include location of high water level indicator)

3.9. RIVER TYPING: Refer to photographs of river type and indicate which resembles the river

Number (1-14) ☒ None of them ☐

3.10. TIME TAKEN 1 1/2 hours

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NWA NORTH WEST REGION, CHARLTON FAIRCLough HOUSE, WARRINGTON, WA1 1JL. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1	
A. BACKGROUND INFORMATION <i>This information is being collected separately.</i>	
Altitude(m) Solid geology Distance from source(km)	Slope Drift geology Mean Annual Flow category (1-10) Planform category
B. FIELD SURVEY DETAILS <i>Complete all questions.</i>	
Site number: 603 River: Thursch Mid-section grid reference if different from designated site:	
Date: 10/1/1994 Start time: 11:20 Surveyor name: John Gunn + Mrs. Delisle	
Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <i>If yes, state</i>	
Bed of river visible? No <input type="checkbox"/> partially <input type="checkbox"/> entirely <input checked="" type="checkbox"/> <i>(tick one box)</i>	
Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <i>(tick one box)</i>	
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <i>(tick one box)</i>	
Site surveyed from: left bank <input type="checkbox"/> right bank <input checked="" type="checkbox"/> both banks <input type="checkbox"/> channel <input type="checkbox"/>	
C. DOMINANT VALLEY FORM <i>(tick one box only)</i>	D. DOMINANT CHANNEL FORM <i>(tick one box only)</i>
 <input checked="" type="checkbox"/> vee	predominantly culverted <input type="checkbox"/>
 <input type="checkbox"/> concave/bowl	open, but bed or banks predominantly artificial (eg box reinforced) <input type="checkbox"/>
 <input type="checkbox"/> stepped valley floor (terraced)	open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/>
 <input type="checkbox"/> symmetrical	open, but predominantly artificially dug (eg. mill leat, dyke) <input type="checkbox"/>
 <input type="checkbox"/> asymmetrical	not artificial, but dammed <input type="checkbox"/>
 <input type="checkbox"/> gorge	no obvious modification ("semi-natural") <input checked="" type="checkbox"/>
E. NAVIGATION <i>(tick one box only)</i>	
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>	
F. DOMINANT FLOW TYPE <i>(tick one box only)</i>	
torrential/high water <input type="checkbox"/> riffle pool <input type="checkbox"/> rap <input type="checkbox"/> weir <input type="checkbox"/>	
step pool <input checked="" type="checkbox"/> approximately laminar <input type="checkbox"/> turbulent <input type="checkbox"/>	

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each bar before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	FA	BE	FA	BE	BC	EA	BC	BC	EA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	EA	SC	SB	SB	NO	SB	NO	SC
CHANNEL										
Predominant channel substrate (one entry only)	GO	BE	BO	BE	BO	BO	BO	BE	BO	NO
Predominant flow type (one entry only)	FF	FW	FF	CA	FW	RF	AL	AL	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	LO	LO	RO	RO	LO	LO	NO	NO	SO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	BC	EA	BC	EA	EA	BC	BC	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	SC	NO	NO	EC	NO	NO	SC
H VEGETATION STRUCTURE (to be assessed over a 10m wide reach). Fill in each bar with one entry only										
- B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	S	NO	NO	NO	NO	NO
LEFT BANK	CO	U	C	S	S	S	S	S	S	S
RIGHT BANK	S	S	C	S	S	S	B	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	C	C	NO	NO
I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: see B (p. 13) area of / (critical) N/A										
NONE (tick as appropriate)										
Liverworts/mosses	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emergent herbs										
Emergent reeds/bushes										
Floating-leaved										
Fern-floating										
Amphibious										
Submerged										
Emergent										
Submerged										
Emergent										
Submerged										
Emergent										
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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 4.2	Bank full width (m) 2.5	Bank full height (m) 4.2
Bank height if different (m) 3.0	Water width (m) 2.5	Bank height if different (m) 7.20
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ clays: algal growth compact, stable
 unconsolidated ☐ clays: fresh clean gravel, easily dislodged, loose
 unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)
 Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate
 None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)
 Banks: None ☒ L ☒ R ☐
 Resectioning ☐ Dredging ☐
 Bank-mowing ☐ Weed-cutting ☐
 Enhancement ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL
 Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)
 Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
 large active meandering river lots of bank slumping

SPECIAL FEATURES (eg oxbow, adjacent habitats of high interest, incidental sightings)

RIVER TYPING Refer to photographs of river types and indicate which resembles the site
 Number (1-14) 10 None of them ☐

TIME TAKEN 1 hr 10 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOR NWA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE
 (TELEPHONE: PETER FOR 7-31-3140; TALL RAVEN 7-16-4343; ANDREW BROOKS 7-25-5712)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 608 River: Severn Mid-section grid reference if different from designated site: 53 437 164
 Date: 2.1.5/1994 Start time: 8:30 Surveyor name: Peter Smith (METS) 0800 000 0000 (0000)
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
 Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)
 Is there a functioning navigation? No ☐ Yes ☐ Don't know ☒

F. PREDOMINANT FLOW TYPE (tick one box only)
 torrential/whitewater ☐ riffle pool ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (no 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (green))

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J. LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or / if present)

	L	R		L	R
Broadleaf mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 70 Right bank: None ☒ Banklength % =

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Groble			Reinforced - toe only		
Composite			Artificial two-stage		
			Revetted		

M. ENBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E (≥ 33%)	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature				
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (runflides)				
Static flow (slats)				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Major islands				
Unvegetated side bar				
Vegetated side bar				

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (see entry only)	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
Predominant flow type (see entry only)	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E (ca 33% area) or U (present) only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent herbs										
Emergent reedbeds										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										

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SWEET-UP OVER 500m (ca 50m apart)

ENTER SITE NUMBER 609

J. LAND USE WITHIN 50m OF RIVER (the E (ca 33% banklength) or U (present) only)

	L	R
Broadleaved woodland		
Coniferous plantation		
Woodland scrub		
Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength = 40 Right bank: None ☐ Banklength =

L. BANK PROFILES WITHIN 500m (the E (ca 33% banklength) or U (present) only)

	L	R
Natural/unmodified		
Vertical undercut		
Vertical + toe		
Steep (> 45°)		
Gentle		
Composite		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength = Right bank: None ☒ Banklength =

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	L	R	E (ca 33%)	None	Present
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

P. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E (ca 33% area) or U (present) only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent herbs										
Emergent reedbeds										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										

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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	2.25	Bank full width (m)	3.25
Bank height if different (m)		Water width (m)	3.0
Embankment height (m)		Water depth (m)	2.4

Bed material at site is: consolidated ☐ clay: silty growth compact, stable
unconsolidated ☐ clay: fresh clean gravel, easily dislodged, loose
unknown ☒ intractable or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total, tick "none" where appropriate)

None ☐ Number of Culverts = 2 Weirs = 1 Bridges = 0 Orbits = 1

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box)

	L	R	CHANNEL
Name			
Resectioning			
Bank-moving			
Enhancement			

T. CHOKED CHANNEL (Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐)

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes: No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if any, and, if representative of the site, a brief description of the channel)

Large section remaining with limited evidence of erosion.

W. SPECIAL FEATURES (tick boxes: No need to estimate abundance)

Concrete structure set in left bank - possibly culvert/bridge in this point

X. RIVER TYPING (Refer to photographs of river types and indicate which features the site is)

Number (1-14) 4 None of them ☐

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Solid geology Distance from source (km)

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 609 River: Severn Mid-section grid reference if different from designated site:

Date: 11.5.1994 Sun time: 17.15 Surveyor name: Iain Smith, Mike Drune

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg, mill race, dyke) ☐ not artificial, but damaged ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☒

F. PREDOMINANT FLOW TYPE (tick one box only)

horizontal/whitewater ☐ riffle pool ☐ step-pool cascade ☐ approximately linear ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP UP OVER 100m ENTER SITE NUMBER **611**

LAND USE WITHIN 50m OF RIVER Use E (2-3% banklength) or U (percent)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength = **100** Right bank None ☒ Banklength = **100**

BANK PROFILES WITHIN 50m (Use E (2-3% banklength) or U (percent))

	L	R		L	R
Natural/Unmodified			Artificial/Modified		
Vertical/Undercut	<input checked="" type="checkbox"/>		Revetment		
Vertical + toe	<input checked="" type="checkbox"/>		Reinforced - whole bank		
Steep (> 45°)	<input checked="" type="checkbox"/>		Reinforced - top only		
Grate			Reinforced - toe only		
Composite			Artificial re-vegetation		
			Perched		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength = Right bank None ☒ Banklength =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present E
None	<input checked="" type="checkbox"/>		Shading of channel	<input checked="" type="checkbox"/>	
Isolated/scattered	<input checked="" type="checkbox"/>		Overhanging boughs	<input checked="" type="checkbox"/>	
Regularly spaced, single	<input checked="" type="checkbox"/>		Exposed bankside roots	<input checked="" type="checkbox"/>	
Occasional clumps	<input checked="" type="checkbox"/>		Underwater tree roots	<input checked="" type="checkbox"/>	
Semi-continuous	<input checked="" type="checkbox"/>		Fallen trees	<input checked="" type="checkbox"/>	
Continuous	<input checked="" type="checkbox"/>		Woody debris	<input checked="" type="checkbox"/>	

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade	<input checked="" type="checkbox"/>			
Torrential flow (rapids)	<input checked="" type="checkbox"/>			
Laminar flow (run/glide)	<input checked="" type="checkbox"/>			
Stale flow (slack)	<input checked="" type="checkbox"/>			
Exposed bedrock	<input checked="" type="checkbox"/>			
Exposed boulders	<input checked="" type="checkbox"/>			

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK	
Bankfull height (m)	1.35	Bankfull width (m)	4
Bank height if different (m)		Water width (m)	1.75
Bank height if different (m)		Bank height if different (m)	
Embankment height (m)		Water depth (m)	0.1
		Embankment height (m)	

Bed material at site is: consolidated ☒ coarse: algal growth compact, stable
unconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose
unconsolidated ☒ inaccessible or not visible (eg boulders & water)

Location of measurement is: riffle ☒ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box per site)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick, none, where appropriate)

None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 2 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Revetment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging
Bank-mowing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wood-cutting
Enhancement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Enhancement works
			Stake

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use only if space permits representative of site as a whole)

Deco channel channel with limited riparian zone (with the river) and some low-lying vegetation along the banks. The channel is straight and uniform.

SPECIAL FEATURES (if others, reference habitat of high interest, botanical significance)

RIVER TYPING (Refer to photographs of river type and indicate which resembles the site)

Number (1-12) ☒ None of them ☐

TIME TAKEN **75 mins**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, KRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 1HE. TELEPHONE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5171

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK	
Bankfull height (m)	1.20	Bankfull width (m)	8.50
Bank height if different (m)	1.30	Water width (m)	4.00
Bank height if different (m)		Bank height if different (m)	2.00
Embankment height (m)		Water depth (m)	0.25
		Embankment height (m)	

Bed material at site is: consolidated ☒ coarse: algal growth compact, stable
unconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose
unconsolidated ☒ inaccessible or not visible (eg boulders & water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box per site)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick, none, where appropriate)

None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 1 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Revetment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging
Bank-mowing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wood-cutting
Enhancement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Enhancement works
			Stake

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use only if space permits representative of site as a whole)

Top 10-15m of channel (with the river) and some low-lying vegetation along the banks. The channel is straight and uniform.

SPECIAL FEATURES (if others, reference habitat of high interest, botanical significance)

RIVER TYPING (Refer to photographs of river type and indicate which resembles the site)

Number (1-12) ☒ None of them ☐

TIME TAKEN **40 mins**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, KRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 1HE. TELEPHONE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5171

No, parallel stream present adjacent to the 100m section

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: **611** River **STO. 145** Mid-section grid reference if different from designated site:

Date **21.5.1994** Start time: **8.45** Surveyor name **J.A.M. CUNYAN / P.M. LICHVILL**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ ves ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg, mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

A. BACKGROUND INFORMATION (This information is being collected separately.)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 605 River: POWICK Mid-section grid reference if different from designated site: _____
 Grid Reference: 55473151
 Date: 11.5.1994 Start time: 11:15 Surveyor name: J.P.M. SURVEY/1994
 Are conditions affecting survey? No ☐ Yes ☒ If yes, state: _____
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg. box reinforced) ☐ open, little or no obvious reinforcement, but reinforced and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ turbulent ☐

G. CHANNEL DIMENSIONS AND INFLUENCES

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = 30

H. BANK PROFILES WITHIN 100m (tick one box per bank)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = 30

I. ENTIRETY OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

Trees: None ☒ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

Associated features: None ☒ Shedding of branches ☐ Overhanging branches ☐ Exposed bank side roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

J. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles: _____ Pools: _____ Unvegetated Point Bars: _____ Vegetated Point Bars: _____

Left bank: None ☒ Present ☐ Right bank: None ☒ Present ☐

Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

K. CHANNEL DIMENSIONS AND INFLUENCES

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = 30

L. BANK PROFILES WITHIN 100m (tick one box per bank)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = 30

M. ENTIRETY OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

Trees: None ☒ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

Associated features: None ☒ Shedding of branches ☐ Overhanging branches ☐ Exposed bank side roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

N. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles: _____ Pools: _____ Unvegetated Point Bars: _____ Vegetated Point Bars: _____

Left bank: None ☒ Present ☐ Right bank: None ☒ Present ☐

Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

O. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ Name of them ☐

P. SPECIAL FEATURES (eg. weirs, artificial habitats of high interest, incidental structures)

3 weirs present: _____

Q. CHECK THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NWA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE
 TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL KAYEN 7-10-430; ANDREW BROOKS 7-25-3111

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately.)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 605 River: POWICK Mid-section grid reference if different from designated site: _____
 Grid Reference: 55473151
 Date: 11.5.1994 Start time: 11:15 Surveyor name: J.P.M. SURVEY/1994
 Are conditions affecting survey? No ☐ Yes ☒ If yes, state: _____
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg. box reinforced) ☐ open, little or no obvious reinforcement, but reinforced and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ turbulent ☐

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G. CHANNEL DIMENSIONS AND INFLUENCES

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = 30

H. BANK PROFILES WITHIN 100m (tick one box per bank)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = 30

I. ENTIRETY OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

Trees: None ☒ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

Associated features: None ☒ Shedding of branches ☐ Overhanging branches ☐ Exposed bank side roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

J. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles: _____ Pools: _____ Unvegetated Point Bars: _____ Vegetated Point Bars: _____

Left bank: None ☒ Present ☐ Right bank: None ☒ Present ☐

Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

K. CHANNEL VEGETATION TYPES (tick one box per type)

None (tick one box only) ☒

Live roots/branches ☐ Emergent herbs ☐ Emergent sedges ☐ Floating-leaved ☐ Free-floating ☐ Amphibious ☐ Submerged ☐ Filamentous algae ☐

The end column for overall assessment over 500m (see E or F)

29 April 1994

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SWEEP UP OVER 300m

ENTER SITE NUMBER

642

LAND USE WITHIN 50m OF RIVER. Use E (± 33% banklength) or U if present

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture	G	E	Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank

None

☒

Banklength % =

Right bank

None

☒

Banklength % =

BANK PROFILES WITHIN 500m. Use E (± 33% banklength) or U if present

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	U	E	Recessed		
Vertical + toe	U		Reinforced - whole bank		
Slope (> 45°)	U		Reinforced - top only		
Gentle		✓	Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank

None

☒

Banklength % =

Right bank

None

☐

Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)	ASSOCIATED FEATURES (Tick one box per feature)	
<div>None</div> <div><input checked="" type="checkbox"/></div> <div>Left</div> <div><input type="checkbox"/></div> <div>Right</div>	<div>E ≥ 33%</div> <div>None</div> <div><input type="checkbox"/></div> <div>Present</div> <div><input type="checkbox"/></div>	
Isolated/scattered	Shading of channel	<input type="checkbox"/>

☒

Overhanging boughs
 ☒ |

☐

Regularly spaced, single
 Exposed bankside roots | ☐ |

☐

| Occasional clumps | Underwater tree roots | ☒ |

☐

| Semi-continuous | Fallen trees | ☒ |

☐

Continuous	Woody debris	☐ ☐ NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)	Number of: Riffles = 14	Pools = 2	Unvegetated Point Bars = 2	Vegetated Point Bars = 1		-------------------------	--------------------------	----------------------------	--------------------------		Waterfall/cascade	<input type="checkbox"/>			☒ None ☐ Present ☐	Unvegetated mid-channel bars ☐ ☒ Vegetated mid-channel bars ☐ ☒
Torrential flow (rapids)	☒ ☐ Nature island(s) ☒ ☐																	
Laminar flow (runoff)	☐ ☒ Unvegetated side bar ☐ ☒																	
Stable flow (slacks)	☒ ☐ Vegetated side bar ☐ ☒																	
Exposed bedrock	☐ ☒ Artificial ☒ ☐																	
Exposed boulders	☐ ☐																	

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CHANNEL DIMENSIONS & INFLUENCES

Channel dimensions to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK		CHANNEL	RIGHT BANK		
Bankfull height (m)	0.45	Bankfull width (m)	5.25	Bankfull height (m)	0.45
Bank height if different (m)	0.45	Water width (m)	5.25	Bank height if different (m)	0.45
Enbanked height (m)		Water depth (m)	0.20	Enbanked height (m)	

Bed material at site is: consolidated ☒ else: algal growth compact, stable
 unconsolidated ☐ else: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES. Use tally method, then total. Tick 'none' where appropriate.

None <input checked="" type="checkbox"/>	Number	Culverts =	Walls =	Bridges =	Outfalls =
EVIDENCE OF RECENT MANAGEMENT (Obtain signs tick boxes)					

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Ward-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> State

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: (tick boxes) No need to estimate abundance

Giant Hogweed <input type="checkbox"/>	Himalayan Balsam <input type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>
--	---	--

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check) Representative of site as a whole

Small active meandering of a fast river in area of upland sheep grazing.

SPECIAL FEATURES e.g. rapid, salmon, habitats of high interest, bird sightings

RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

TIME TAKEN 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD PARLOUGH HOUSE, WARRINGTON, WA9 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4348; ANDREW BROOKES 7-25-5712

29 April 1994	RIVER HABITAT SURVEY: 1994 VERIFICATION		Page 1 of 4
A. BACKGROUND INFORMATION <i>This information is being collected separately</i>			
Altitude(m) Solid geology Distance from source(km)	Slope Drift geology	Mean Annual Flow category (1-10) Platform category	
B. FIELD SURVEY DETAILS <i>Complete all questions</i>			
Site number: <u>642</u> River <u>gum</u> Grid Reference: <u>S 11462058</u>		Mid-section grid reference if different from designated site:	
Date <u>10/5/1994</u> Start time: <u>9:30</u>	Surveyor name <u>IPIN SUND MITAL</u> DILLI CEFO		
Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, state _____			
Bed of river visible? No <input type="checkbox"/> partially <input type="checkbox"/> entirely <input checked="" type="checkbox"/> <i>(tick one box)</i>			
Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <i>(tick one box)</i>			
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <i>(tick one box)</i>			
Site surveyed from: left bank <input checked="" type="checkbox"/> right bank <input type="checkbox"/> both banks <input type="checkbox"/> channel <input type="checkbox"/>			
C. PREDOMINANT VALLEY FORM <i>(tick one box only)</i>		D. PREDOMINANT CHANNEL FORM <i>(tick one box only)</i>	
<div style="display: flex; align-items: center;"> <input type="checkbox"/> vee </div> <div style="display: flex; align-items: center;"> <input checked="" type="checkbox"/> concave/bowl </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> stepped valley floor (terraced) </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> symmetrical </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> asymmetrical </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> gorge </div>		<div style="display: flex; align-items: center;"> <input type="checkbox"/> predominantly culverted </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforcement) </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke) </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> not artificial, but dammed </div> <div style="display: flex; align-items: center;"> <input checked="" type="checkbox"/> no obvious modification ("semi-natural") </div>	
E. NAVIGATION <i>(tick one box only)</i>			
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>			
F. PREDOMINANT FLOW TYPE <i>(tick one box only)</i>			
<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> torrential/whitewater <input type="checkbox"/> </div> <div style="width: 48%;"> static <input type="checkbox"/> </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> step-pool cascade <input type="checkbox"/> </div> <div style="width: 48%;"> approximately laminar <input type="checkbox"/> </div> </div>			

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TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	M	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	SC	SC	EC	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CO	CO	CO	CO	CO	CO	SP	CO	CO	
Predominant flow type (one entry only)	RF	AL	AL	AL	AL	AL	AL	AL	RF	
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	VB	NO	RO	RO	NO	NO	NO	RO	RO	RO
RIGHT BANK										
Predominant bank material (one entry only)	CL	EA	EA	EA	BE	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	EC	NO	NO	SC	SC	NO	PA	SC	SC	SC
II. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	B	U	U	U	U	S	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
III. CHANNEL VEGETATION TYPES (fill in stream beds with one entry; use X for 33% area or J for Green)										
NONE (tick as appropriate)										
Liverworts/mosses	✓	E	E	E	E	E	E	E	E	G
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved		✓	✓	✓	✓	✓	✓	✓	✓	✓
Free-floating										
Amphibious										
Submerged	F									✓
Pilamineous algae	✓		✓	✓	✓	✓	✓	✓	✓	✓

Use end column for overall assessment over 500m (use X or J)

Vegetation present: T

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

II. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.50	Bank full width (m)	19.0	Bank full height (m)	1.50
Bank height if different (m)	1.50	Water width (m)	10.0	Bank height if different (m)	1.50
Embankment height (m)		Water depth (m)		Embankment height (m)	

Bed material at site is: consolidated ☐ chest: silt/clay growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ loose/crumbly or not stable (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

III. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

IV. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None	Number	Culverts	Weirs	Bridges	Outfalls
<input checked="" type="checkbox"/>					

V. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick boxes

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None
Reseeding	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-coring	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			Stake

VI. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

VII. UPSTREAM NUISANCE PLANT SPECIES (tick box) (No need to tick all)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

VIII. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

UPSTREAM: OPEN, GRASSY, TALLS, WIDE, SECTION, TALLS IN BOTH FLOES
TIP SECTION: STRONG, WIDE, EC, NA, BANKS.

IX. SPECIAL FEATURES (tick box)

X. RIVER TYPE (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 0/3 None of them ☐

XI. TIMETAKING

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately

Altitude (m) _____ Slope _____
Solid geology _____ Drift geology _____
Distance from source (km) _____ Mean Annual Flow category (1-10) _____
Planform category _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 645 River: Severn Mid-section grid reference if different from designated site: _____
Date: 11.1.1994 Start time: 9.45am Surveyor name: Chris Gunn & Kate Duille (2/8)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/white water ☐ riffle/pool ☒ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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III. SITES UP OVER 100m ENTER SITE NUMBER _____

IV. LAND USE WITHIN 50m OF RIVER (Use E for 33% banklength or J if present)

	L	R		L	R
Broadleaved woodland			Reed, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

V. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 15% Right bank: None ☐ Banklength % = 20%

VI. BANK PROFILES WITHIN 100m (Use E for 33% banklength or J if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical bankface			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial in-situ		
			Patched		

VII. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = _____ Right bank: None ☐ Banklength % = _____

VIII. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	L/R	ASSOCIATED FEATURES (Tick one box per feature)	None	Present
None	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/hexetered	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

IX. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of Riffles = 5	Pools = 0	Unvegetated Point Bars = 2	Vegetated Point Bars = 0
Waterfall/cascade	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Turbulent flow (rapids)	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	Mid-channel islands	<input type="checkbox"/>
Bank flow (ditch)	<input type="checkbox"/>	Unvegetated side bars	<input type="checkbox"/>
		Artificial	<input type="checkbox"/>

Vegetation: Willow spp, Rhamnus sp, F. l. doge.

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	GP	GP	GP	LA	EA	EP	EA	EA	EA
Predominant bank material (one entry only)	EA	GP	GP	GP	LA	EA	EP	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	PB	PB	PB	NO	NO	EC	EC	ES	EC
CHANNEL	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	AL	AL	AL	AL	AL	RF	AL	AL	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant bank material (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	PB	EC	EC	EC	EC	EC	SC	PB	EC	EC
H. VEGETATION STRUCTURE (to be assessed over a 10m wide transect) Fill in each box with one entry only	B = bare U = uniform S = simple C = complex Refer to spot-check key									
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	N	N	N	N
LEFT BANK	S	B	B	S	S	B	B	B	B	B
RIGHT BANK	B	B	B	B	B	B	S	B	B	B
RIGHT RIPARIAN ZONE (if none, enter NO)	S	N	N	N	N	N	S	S	S	S
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only (e.g. 10% tree) or 'Other')	NONE (tick as appropriate)									
Upriver/mosses										
Emergent herbs										
Emergent rootbedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

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ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER (tick 'none' box or estimate percentage banklength if present)

	L	R	
Broadleaved woodland			Box, marsh, fen
Coniferous plantation			Improved/improved grass
Moorland heath			Tilled land
Scrub/rough pasture			Suburban/urban development

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength S = 60 Right bank: None ☐ Banklength S =

L. BANK PROFILES WITHIN 50m (tick 'none' box or estimate percentage banklength if present)

	L	R	
Natural/unmodified			Artificial/unmodified
Vertical undercut			Revetment
Vertical + toe			Reinforced - whole bank
Slope (> 45°)			Reinforced - top only
Gravels			Reinforced - toe only
Composites			Artificial toe-slope
			Peached

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength S = Right bank: None ☒ Banklength S =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	E x JJS	None	Percent E
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Percent E
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES (Record actual number of Allee, pool and point bars)

	Number of Riparian	Pool	Unvegetated Point Bars	Vegetated Point Bars
Vegetated Point Bars				
Unvegetated Point Bars				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Unvegetated side bar				
Vegetated side bar				

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (*tick one box*)

G PHYSICAL ATTRIBUTES (*to be assessed across channel within a 1m wide zone*)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
LEFT BANK										
Predominant bank material (<i>four entry only</i>)	EA	EA	LA	LA	EA	EA	FA	EA	EA	
- bank modification (<i>four entry only</i>)	N0	M0	N0	M0	N0	M0	N0	N0	N0	M0
- bank feature(s)	SC	Lb	PB	SC	M0	SP	N0	SC	SC	PB
CHANNEL										
Predominant channel substrate (<i>four entry only</i>)	GP	CO	SP	GP	GP	CO	CO	SP	GP	
Predominant flow type (<i>four entry only</i>)	RF	AL	AL	RF	RF	AL	RF	LF	PO	PF
- channel modification(s)	M0	M0	M0	M0	M0	N0	N0	M0	M0	M0
- channel feature(s)	WE	M0	M0	M0	M0	N0	N0	M0	M0	N0
RIGHT BANK										
Predominant bank material (<i>four entry only</i>)	EP	FA	EA	LA	LA	EA	EA	LA	LA	FA
- bank modification (<i>four entry only</i>)	N0	N0	N0	M0	N0	N0	N0	N0	N0	M0
- bank feature(s)	SC	LP	N0	EP	EL	SC	EL	SC	N0	SC

H VEGETATION STRUCTURE (*to be assessed over a 10m wide stretch*): Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C	N	C	C	V	C	C
LEFT RIPARIAN ZONE (<i>if none, enter SO</i>)	H	C	N	C	C	C	C	V	C	C
LEFT BANK	S	C	S	S	C	S	S	S	/	S
RIGHT BANK	C	B	C	B	B	S	B	S	S	S
RIGHT RIPARIAN ZONE (<i>if none, enter SO</i>)	A	I	N	N	N	V	S	C	C	C

I CHANNEL VEGETATION TYPES (*fill in relevant boxes with one entry only B (ca 33% area) or V (critical) cover*)

	B	V	B	V	B	V	B	V	B	V
NONE (<i>tick as appropriate</i>)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent sedges										
Emergent herbs										
Emergent root/rhizomes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

Summary

	1	2	3	4	5	6	7	8	9	10
Flow										
Bank										
Channel										
Vegetation										
Overall Assessment										

Use end column for overall assessment per 500m (use C for < 2%)

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SWEET-UP OVER 500m² of riparian zone

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ENTER SITE NUMBER **A4**

J - LAND USE WITHIN 50m OF RIVER (Use E for 31% banklength or F if present)

	L	R	
Broadleaf/mixed woodland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bay, marsh, fen
Coniferous plantation			Impervious/semi-impervious grass
Moorland heath			Tilled land
Scrub/rough pasture			Suburban/urban development

K - LINEAR EXTENT OF RIPARIAN ZONE (tick "none", box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **80** Right bank None ☐ Banklength % = **50**

L - BANK PROFILES WITHIN 100m (Use E for 31% banklength or F if present)

Natural/unmodified	L	R	Artificial/modified
Vertical/cutbank	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank
Steep (>45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only
Grass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only
Cornfield	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial toe-stage
			Pierced

M - EMBANKMENTS (tick "none", box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = **80** Right bank None ☒ Banklength % = **50**

N - PERCENT EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	E ≥ 31%	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Under-story tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

O - NATURAL CHANNEL FEATURES: Record stream number, height of riffles, pools and point bars

Number of Riffles = 23	Pools = 22	Unvegetated Point Bars = 9	Vegetated Point Bars = 0				
Tick one box per feature	None	Present	E	None	Present	E	
Watershed/succession	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transverse flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Longitudinal flow (run/slides)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Known islands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (stagnant)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES					
P. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle					
LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)		Bankfull width (m)		Bankfull height (m)	
0.45		6.35		0.45	
Bank height if different (m)		Water depth (m)		Bank height if different (m)	
3.20		5.75		2.20	
Embanked height (m)		Water width (m)		Embanked height (m)	
		0.05			
Bed material at site is: <input type="checkbox"/> consolidated <input type="checkbox"/> clasts: algal growth compact, stable					
<input type="checkbox"/> unconsolidated <input type="checkbox"/> clasts: fresh clean gravel, easily displaced, loose					
<input type="checkbox"/> unknown <input type="checkbox"/> inaccessible or not visible (eg turbid water)					
Location of measurements is: riffle <input checked="" type="checkbox"/> run or glide <input type="checkbox"/> other <input type="checkbox"/> (tick one box)					
Q. TRIBUTARIES (tick one box only)					
Significant tributary within 500m length? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>					
R. NUMBER OF ARTIFICIAL FEATURES. Use Gully method, then totals tick "none", where appropriate					
None <input type="checkbox"/> Number of Culverts = _____ Weirs = 1 _____ Bridges = 4 _____ Outfalls = _____					
S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick lastly)					
BANKS		CHANNEL			
None <input checked="" type="checkbox"/> <input type="checkbox"/>		None <input checked="" type="checkbox"/> <input type="checkbox"/>			
Revetting <input type="checkbox"/> <input type="checkbox"/>		Dredging <input type="checkbox"/> <input type="checkbox"/>			
Bank-sloping <input type="checkbox"/> <input type="checkbox"/>		Weed-cutting <input type="checkbox"/> <input type="checkbox"/>			
Enhancement <input type="checkbox"/> <input type="checkbox"/>		Enhancement works <input type="checkbox"/> <input type="checkbox"/>			
T. CHOSED CHANNEL (tick one box only)					
Is 33% or more of the channel over 500m choked with vegetation? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>					
U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) as used to estimate abundance)					
Giant Hogweed <input type="checkbox"/>		Himalayan Balsam <input type="checkbox"/>		Japanese Knotweed <input type="checkbox"/>	
V. BRIEF DESCRIPTIVE SENTENCE (indicate if you check representative of site as a whole)					
Small fast flowing brook (riffle). Channel continues as a					
recessed in section adjacent to houses (left bank)					
W. SPECIAL FEATURES (if others, indicate location of site features, including vegetation)					
RIVER TYPING: Refer to photographs of river types and indicate which resembles the site					
Number (1-14) <input checked="" type="checkbox"/> Name of team <input type="checkbox"/>					
TIME TAKEN: _____ 1 hour					

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RIVER HABITAT SURVEY: 1994 VERIFICATION

Page

BACKGROUND INFORMATION

This information is being collected separately.

Altitude(m)

Slope

Drift geology

Mean Annual Flow category (1-10)

Distance from source(km)

Planform category

FIELD SURVEY DETAILS

Complete all questions

Site number: 647

River: Trib of Cowd Creek

Mid-section grid reference if different from designated site:

Date: 11/5/1994

Start time: 1315

Surveyor name: J. G. MD

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (12) (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (12) (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM

(tick one box only)

☐ vvc
 ☐ concave/conv
 ☐ stepped valley floor (terraced)
 ☒ symmetrical
 ☐ asymmetrical
 ☐ gorge

PREDOMINANT CHANNEL FORM

(tick one box only)

☐ predominantly culverted
 ☐ open, but bed or banks predominantly artificial (eg box reinforced)
 ☐ open, little or no obvious reinforcement, but resctioned and/or realigned
 ☐ open, but predominantly artificially dug (eg. mill leat, dyke)
 ☐ not artificial, but dammed
 ☐ no obvious modification ("semi-natural")

NAVIGATION

(tick one box only)

☐ Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE

(tick one box only)

☐ normally white water
 ☐ riffle pool
 ☐ stable
 ☐ step-pool cascade

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 0.90	Bankfull width (m) 2.75	Bankfull height (m) 0.30
Bank height if different (m) 0.95	Water width (m) 1.90	Bank height if different (m) 1.15
Embanked height (m)	Water depth (m) 0.05	Embanked height (m)

Bed material at site is: consolidated ☐ clastic: algal growth compact, stable
 unconsolidated ☒ clastic: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)
 Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)
 None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			State

T. CHOKED CHANNEL
 Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es)) No need to eliminate abundance
 Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
 Small river meandering through agricultural landscape with a depression channelled corridor in another landscape.

W. SPECIAL FEATURES (eg patterns, adjacent habitats of high biodiversity, medieval settlements)
 Very small orban on left bank caused by deposition of silt.

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)
 Number (1-14) ☐ None of them ☐

Y. TIME TAKEN
 1hr 20mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, RPA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE.
 TELEPHONE NUMBERS: PETER FOX 1-2-110; PAUL RAYN 1-2-10-333; ANDREW BROOKES 1-2-15-5712

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A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
 Solid geology Distance from source(km) Platform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 648 River: LOURN Broom Mid-section grid reference if different from designated site:
 Grid Reference: Date: 11.1.1994 Start time: 15.25 Surveyor name: J.G. & M.D.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☐ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)
 Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle/pool ☐ static ☐
☐ step-pool cascade ☒ approximately laminar ☐ impounded

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (fine entry only)	EA	EA	EA	GR	GA	EA	RW	CC	GP	EA
- bank modification (fine entry only)	NO	NO	NO	RI	RI	NO	RI	NO	NO	NO
- bank feature(s)	FB	SB	SC	SC	NO	SC	SC	NO	NO	SC
CHANNEL										
Predominant channel substrate (fine entry only)	CO	SP	NI	NI	NI	NI	SI	AR	CO	CO
Predominant flow type (fine entry only)	PL	RF	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (fine entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (fine entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide zone). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	C	C	C	S	S	S	B	U	S
RIGHT BANK	S	S	S	S	C	S	S	U	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (occasional))

NONE (tick as appropriate) ☒

Emergent herbs ☒

Emergent reeds/sedges ☒

Floating-leaved ☒

Free-floating ☒

Amphibious ☒

Submerged ☒

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SWEEPNET OVER 500m ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or / if present)

	L	R		L	R
Broadleaf/mixed woodland	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Bog, marsh, fen	<input type="checkbox"/>	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	<input type="checkbox"/>	Improved/semi-improved grass	<input type="checkbox"/>	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	<input type="checkbox"/>	Tilled land	<input type="checkbox"/>	<input type="checkbox"/>
Scrub/bush pasture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Suburban/urban development	<input type="checkbox"/>	<input checked="" type="checkbox"/>

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)
 Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % = 30

L. BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or / if present)

	L	R		L	R
Natural/unmodified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial/modified	<input type="checkbox"/>	<input type="checkbox"/>
Vertical undercut	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Resectioned	<input type="checkbox"/>	<input type="checkbox"/>
Vertical + toe	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - whole bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sleep (> 45°)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only	<input type="checkbox"/>	<input type="checkbox"/>
Gentle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>	<input type="checkbox"/>
Composite	<input type="checkbox"/>	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>	<input type="checkbox"/>
			Peached	<input type="checkbox"/>	<input type="checkbox"/>

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)
 Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of RIFFLES = 2	Pools =	Unvegetated Point Bars = 1	Vegetated Point Bars =
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (lock)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at upstream end ☐ downstream end ☐ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EP	SH	CA	EH	SH	SA	SA	CH	CH	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

II VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	NO	U	S	U	S	C	S	C	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	S	U	S	S	S	C	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	S	C	C	C	NO	S

III CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E for 10% or more, or F for present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged - <i>Ranunculus</i> sp.										
Filamentous algae										

Use end column for overall assessment over 500m line E or F

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SWEEP-UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (tick 'none' box or estimate percentage banklength if present)

	L	R		L	R
Broadleaved woodland			Reed, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 70 Right bank None ☐ Banklength % = 90

L BANK PROFILES WITHIN 500m (tick 'none' box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Recessed		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite		Artificial two-stage			
			Posed		

M EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % = 2

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)		ASSOCIATED FEATURES (tick one box per feature)	
Left	Right	E 2-33%	Present E
None		Shading of channel	
Isolated/scattered		Overhanging boughs	
Regularly spaced, single		Exposed bankside roots	
Occasional clumps		Understorey tree roots	
Semi-continuous		Fallen trees	
Continuous		Woody debris	

O NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Tick one box per feature	None Present E	None Present E	None Present E
Watersfall/cascade		Unvegetated mid-channel bars	
Turbulent flow (rapids)		Vegetated mid-channel bars	
Laminar flow (run/slides)		Mature island(s)	
Static flow (back)		Unvegetated side bar	
Exposed bedrock		Vegetated side bar	
Exposed boulders		Artificial	

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DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ cluses: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick 'none' where appropriate

None ☐ Number of Culverts = Weirs = Bridges = 1 Outfalls =

S EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None			None
Recessioning			Dredging
Bank-moving			Weed-cutting
Enhancement - <i>T. planifolia</i>			Enhancement works
			State

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Meandering channel, not actively eroding. Top 10cm trees lined (both banks). U. canopy substrate. U. little channelisation.

W SPECIAL FEATURES (eg above, adjacent habitats of high interest, riparian sightings)

X RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA3 3HE. TEL: 01925 431400; FAX: 01925 431401; ANDREW BROOKES 01925 431411

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A BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B FIELD SURVEY DETAILS: Complete all questions

Site number: 651 River Poxon Mid-section grid reference if different from designated site: *SS 846 996*

Date: 29/4/1994 Start time: 17:20 Surveyor name: JAIN SUNDH / PAUL HAWKES

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

D PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but recessioning and/or realigned ☐ open, but predominantly artificially dug (eg. mill feet, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I of each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	CC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	NO	U	S	U	S	S	S	S	S
LEFT BANK	U	U	U	S	U	C	C	C	C	C
RIGHT BANK	U	U	U	S	S	C	C	C	C	C
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	S	C	C	C	NO	J

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or J (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged (Najas-like)	E	S								
Filamentous algae	E	S	E	E	E	E	E	E	E	E

Use end column for overall assessment over 500m (use E or J)

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SWEEP-UP OVER 500m

ENTER SITE NUMBER 65

LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or J (if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	5	✓
Moorland/heath			Tilled land		6
Scrub/brough pasture	✓		Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 90 Right bank None ☐ Banklength % = 90

M. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or J (if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut	✓	✓	Resectioned		
Vertical + toe	✓	✓	Reinforced - whole bank		
Slope (> 45°)	✓	✓	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

N. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % = 20

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (tick one box per feature)
None	<input type="checkbox"/>	<input type="checkbox"/>	E ≥ 33%
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees
			Woody debris

P. NATURAL CHANNEL FEATURES (Return count number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Present	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Artificial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

K. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.75	Bankfull width (m)
Bank height if different (m)	2	Bankfull height (m)
Embanked height (m)	0.4	Bank height if different (m)
	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ clots: algal growth compact, stable
unconsolidated ☐ clots: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

L. TRIBUTARIES (tick one box only)

Significant tributary within 300m length? No ☒ Yes ☐

M. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None	Number of	Culverts	Weirs	Bridges	Outfalls
			1		

N. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick boxes)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			Stake

O. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

P. NOTABLE NUISANCE PLANT SPECIES (tick boxes) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

Q. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Spot checks typical river. Very little change along length of 500m

R. SPECIAL FEATURES (if obvious, adjacent habitats of high interest; individual sightings)

S. RIVER TYPING (Refer to photographs of river types and indicate which best describes the site)

Number (1-14) 5 None of them ☐

T. TIME TAKEN 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 652 River: River of Mid-section grid reference if different from designated site: 8. P. 200

Date: 3.1.94 Start time: 15:00 Surveyor name: J. A. S. J. P. A. L. F. I. G. H. E. R. (J. A. S. J. P. A. L. F. I. G. H. E. R.)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vec ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill lent, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately binomial ☐ impounded ☐

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CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site for a straight uniform section, preferably across a run)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.75	Bank full width (m) 7.15	Bank full height (m) 0.75
Bank height if different (m) 2	Water width (m) 8.75	Bank height if different (m) -
Embankment height (m) -	Water depth (m) 0.4	Embankment height (m) 4

Bed material at site is: consolidated ☒ (fine: silt/clay growth compact, stable)
unconsolidated ☒ (coarse: fresh clean gravel, easily dislodged, loose)
unknown ☐ (irretrievable or not visible (eg. turbid water))

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only): Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES Use tally marks, then total: tick "none" where appropriate
None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT Observe (tick one box only): Banks ☒ Channel ☒
None ☐ None ☐
Revetting ☐ Dredging ☐
Bank reinforcement ☐ Weircutting ☐
Enhancement ☐ Enhancement works ☐ State ☐

CHOICED CHANNEL
Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NOISANCE PLANT SPECIES (tick boxes) No need to estimate abundance
Coral Hays end ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Underline if spot check representative of site as a whole)
Spot check typical 500m section U. bank clearing & structure

SPECIAL FEATURES eg. oxbow, adjacent habitats of high interest, historical sightings

RIVER TYPING Refer to photographs of river types and indicate which resembles the site
Numbers (1-14) ☒ None of them ☐

TIME TAKEN 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NAA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA5 1TE
TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAYLEN 7-18-4345; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 5 of 5

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Platform category
Solid geology Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 657 River POX Mid-section grid reference if different from designated site:
Grid Reference: SJ 894 046

Date 2.5.1994 Start time: 17:30 Surveyor name: Peter Fox / Paul Raylen / Andrew Brooks (1-2-3)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only):
Vee ☐ predominantly culverted
concave/bowl ☐ open, but bed or banks predominantly artificial (eg. box reinforcement)
stepped valley floor (terraced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned
symmetrical ☒ open, but predominantly artificially dug (eg. mill leat, dyke)
asymmetrical ☐ not artificial, but dammed
gorge ☐ no obvious modification ("semi-natural") ☐

PREDOMINANT CHANNEL FORM (tick one box only):
Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only):
torrential/whirlwater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

1994-05-03 11:11 DIST. OF FRESHWATER ECOL.

0529 462190 P.102

1994-05-03 11:12 DIST. OF FRESHWATER ECOL.

0529 462190 P.102

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TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 5m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	CP	GA	EA	CA	CA	EA	EA	EA	EA
Predominant bank material (four entry only)	EA	CP	GA	EA	CA	CA	EA	EA	EA	EA
- bank modification (four entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	CC	NO	SC	CC	SC	SC	CC	SC
CHANNEL	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Predominant channel substrate (four entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (four entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (four entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE (to be assessed over a 10m wide 1m wide zone) Fill in each box with one entry only

B = bare U = tallies S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	NO	NO	C	C	C	C	C	C
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	S	U	C	S	S	U	S	B

CHANNEL VEGETATION TYPES (tick one box only) (if U, record bank with one entry; but B (to 33% area) or C (pressure))

NONE (tick one box only)

Emergent herbs

Emergent reeds/sedges

Flipping-leaved

Fern-flowering

Amphibious

Submerged

Pinnate algae

Use red column for overall assessment over 500m (one C or U)

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ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER (tick one box only) (if U, record bank with one entry; but B (to 33% area) or C (pressure))

	L	R
Broadleaf/woodland	5	✓
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture	5	

LINEAR EXTENT OF RIPARIAN ZONE (tick one box only) (if U, record bank with one entry; but B (to 33% area) or C (pressure))

Left bank None ☐ Banklength S = 80 Right bank None ☐ Banklength S =

BANK PROFILES WITHIN 50m (tick one box only) (if U, record bank with one entry; but B (to 33% area) or C (pressure))

	L	R
Natural/unmodified	7	5
Vertical/horizontal	7	5
Vertical + toe	7	5
Steep (> 45°)	7	5
Grass	7	5
Composite	7	5

LANDSCAPE FEATURES (tick one box only) (if U, record bank with one entry; but B (to 33% area) or C (pressure))

Left bank None ☐ Banklength S = Right bank None ☐ Banklength S =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>

ASSOCIATED FEATURES (tick one box per bank)

	Left	Right
Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 14 Pools = 4 (Unvegetated Point Bars = 5 Vegetated Point Bars =)

Tick one box per feature

	None	Present
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>
Terraced flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (stagnant)	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐
Unvegetated side bar ☐ Vegetated side bar ☐
Artificial ☐

12 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

A. CHANNEL DIMENSIONS AND INFLUENCES (This information is being collected separately)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.45	Bank full width (m) 6.5	Bank full height (m) 0.55
Bank height if different (m) -	Water width (m) 2.5	Bank height if different (m) -
Embankment height (m) -	Water depth (m) 0.05	Embankment height (m) -

Bed material at site is: consolidated ☒ other: silt/clay growth compact, stable
 unconsolidated ☐ coarse: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 300m length? No ☒ Yes ☐

Number of artificial features/structures, or any other, that affect flow: None ☐ Number of Culverts = 1 Weirs = 1 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (Other: riparian habitat restoration)

BANKS	CHANNEL
Mowing <input type="checkbox"/>	Mowing <input checked="" type="checkbox"/>
Revegetation <input type="checkbox"/>	Revegetation <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Bank-mowing <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOKED CHANNEL (Is 25% or more of the channel over 300m choked with vegetation?) No ☒ Yes ☐

NOTABLE INVASIVE PLANT SPECIES (List any 10 in the box below, or none if no obvious species)

Chinese Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (In short, 1-2 lines, describe the site as a whole, including any notable features)

Inactive meandering channel, numerous log jams, channel bank erosion, woody debris, some riparian vegetation

SPECIAL FEATURES (eg. notable habitat, or high interest, historical significance)

RIVER TYPING (Refer to the list of river types and indicate which river type best describes the site)

Number (1-12) ☒ None of these ☐

TIME TAKEN 65 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
 TEL: 01925 431140; FAX: 01925 431141; ANDREW BRUOKES 01925 431113

12 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m)	Slope	Mean Annual Flow category (1-10)
Solid geology	Drift geology	Planform category
Distance from source (km)		

B. FIELD SURVEY DETAILS Complete all questions

Site number: 660 River: FADDESBY Mid-section grid reference if different from designated site: SK735095
 Date: 15/12/1994 Start time: 16:00 Surveyor name: N. GRIEVE
 S. HUTCHINGS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

1. Photograph: general character? No ☐ Yes ☒ (tick one box)

2. Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resorted and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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DIMENSIONS AND INFLUENCES

F. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	2.0	Bankfull width (m)	11.1	Bankfull height (m)	2.0
Bank height if different (m)	5.0	Water width (m)	2.7	Bank height if different (m)	—
Embanked height (m)	—	Water depth (m)	0.10	Embanked height (m)	—

Bed material at site is: consolidated ☒ clast: algal growth compact, stable
 unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

G. TRIBUTARIES (tick one box only)
 Significant tributary within 500m length? No ☐ Yes ☒

H. NUMBER OF ARTIFICIAL FEATURES (Use tally method; then total; tick "none" where appropriate)
 None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 3 Outfalls = 0

I. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)
 Banks: None ☒ L ☒ R ☐ Channel: None ☒
 Resectioning ☐ Dredging ☐
 Bank-moving ☐ Weed-cutting ☐
 Enhancement ☐ Enhancement works ☐ State ☐

J. CHOKED CHANNEL
 Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

K. NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance
 Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

L. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
 riverbed channel - low & sluggish at time of survey. Low water considerably in water. Some bank erosion. Spot check good.

M. SPECIAL FEATURES eg adjacent habitats of high interest; incidental sightings

N. RIVER TYPING Refer to photographs of river types and indicate which resembles the site
 Number (1-14) ☐ None of them ☒

O. TIME TAKEN 1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Solid geology Slope Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 66 River: LARSON Mid-section grid reference if different from designated site:
 Grid Reference:
 Date: 29.4.1994 Start time: 14.00 Surveyor name: J. Fox (J.F.S.)
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box) 7
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 6
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel

C. PREDOMINANT VALLEY FORM (tick one box only)
 Vee ☐
 concave/bowl ☐
 stepped valley floor (terraced) ☐
 symmetrical ☒
 asymmetrical ☐
 gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)
 predominantly culverted ☐
 open, but bed or banks predominantly artificial (eg box reinforced) ☐
 open, little or no obvious reinforcement, but resectioned and/or realigned ☐
 open, but predominantly artificially dug (eg mill leat, dyke) ☐
 not artificial, but dammed ☐
 no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)
 Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)
 torrential/whitewater ☐ riffle-pool ☒ static ☐
 step-pool cascade ☐ approximately laminar ☐ impounded ☐

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G. TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	A	C	A	E	A	C	A	E	A
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	N	O	S	C	P	B	N	O	F	C
CHANNEL										
Predominant channel substrate (one entry only)	C	O	A	P	S	C	O	C	O	A
Predominant flow type (one entry only)	N	R	E	A	L	R	E	A	L	R
- channel modification(s)	N	O	N	O	N	O	N	O	N	O
- channel feature(s)	N	O	T	R	O	N	O	N	O	N
RIGHT BANK										
Predominant bank material (one entry only)	E	A	C	A	E	A	C	A	E	A
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	N	O	S	C	P	B	N	O	F	C

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	C	C	S	N	O	N	O	N
LEFT BANK	U	S	S	S	B	S	S	U	U	U
RIGHT BANK	U	S	U	S	B	U	S	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	C	S	S	S	N	O	N	O	N

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/juncos										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

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K. SWEEP-UP OVER 500m

L. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or / (present)

	L	R
Broadleaf/mixed woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Bog, marsh, fen		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

M. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)
 Left bank: None ☐ Banklength % = 50 Right bank: None ☐ Banklength % =

N. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or / (present)

	L	R
Natural/unmodified		
Vertical undercut		
Vertical + toe		
Steep (> 45°)		
Groille		
Composite		
Artificial/unmodified		
Re-sectioned		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

O. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)
 Left bank: None ☐ Banklength % = 0 Right bank: None ☒ Banklength % =

P. NATURAL CHANNEL FEATURES (Refer to spot-check key; use E (≥ 33% area) or / (present))

	Left	Right	E ≥ 33%	None	Present E
Shading of channel					
Overhanging boughs					
Exposed bankside roots					
Underwater tree roots					
Fallen trees					
Woody debris					

Q. NATURAL CHANNEL FEATURES (Refer to spot-check key; use E (≥ 33% area) or / (present))

	Left	Right	E ≥ 33%	None	Present E
Number of Riffles					
Waterfall/cascade					
Torrential flow (rapid)					
Laminar flow (run/glide)					
Static flow (stagnant)					
Exposed bedrock					
Exposed boulders					
Unvegetated mid-channel bar					
Vegetated mid-channel bar					
Mature island(s)					
Unvegetated side bar					
Vegetated side bar					
Artificial					

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ENTER SITE NUMBER: 662

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (Tick one box)

GENERAL PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. The abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
Bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
Bank feature(s)	W	W	W	W	W	W	W	W	W	W
CHANNEL										
Predominant channel substrate (one entry only)	W	W	W	W	W	W	W	W	W	W
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
Channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
Channel feature(s)	W	W	W	W	W	W	W	W	W	W
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
Bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
Bank feature(s)	W	W	W	W	W	W	W	W	W	W

VEGETATION STRUCTURE (to be assessed across a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: B (to 1% area) or C (greater))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Emergent herbs										
Emergent rootbeds										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (one E or A)

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ENTER SITE NUMBER: 662

LAND USE WITHIN 50m OF RIVER (tick one box for each 10% bandlength or 2 if present)

	L	R	L	R
Perennial/irrigated woodland				
Coniferous plantation				
Meadowland/heath				
Scrubland/pasture				

LINEAR EXTENT OF RIPARIAN ZONE (tick none, has or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 80 Right bank None ☐ Banklength % = 80

BACK PROFILES WITHIN 100m (tick none, has or estimate percentage banklength (if present))

	L	R	L	R
Natural/unmodified				
Vertical/Artificial				
Vertical + toe				
Steep (> 45°)				
Grass				
Composite				

ENHANCEMENTS (tick none, has or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right	E > 25%	None	Present
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed buttress roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None				
Waterfall/stade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

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CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.40	Bank full width (m)	6.00
Bank height if different (m)	—	Water width (m)	3.00
Embankment height (m)	—	Water depth (m)	0.15
Bank height if different (m)	—	Embankment height (m)	—

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use full method, then total tick, none, where appropriate)

None ☒ Number of Culverts = Wires = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Ones ticked tick box(es))

	L	R	None	Channel
BANKS				
None				
Revetting				
Bank-mowing				
Enhancement				

CHOICED CHANNEL

Is 3% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es))

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCES (describe if you need, representative of the whole)

Fractal meandering river that has been subject to extensive over-deposition of silt and debris at base of bank (main channel)

SPECIAL FEATURES (tick box(es))

None of them ☐

RIVER FLYING (tick one box only)

Number (1-10) ☐ None of them ☐

TIME TAKEN ☐ 80 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JL

TELEPHONE NUMBERS: PETER FOX 7-31-3146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Planform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 662 River CHATHAM Mid-section grid reference if different from designated site: SK955 OS1

Date: 23.5.1994 Start time: 11.00 Surveyor name: Peter Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) - (C)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (C)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)







predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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A. BACKGROUND INFORMATION (This information is being collected separately)					
Altitude(m) Solid geology Distance from source(km)		Slope Drift geology		Mean Annual Flow category (1-10) Planform category	
B. FIELD SURVEY DETAILS (Complete all questions)					
Site number: 682 Grid Reference:		River Severn Start time: 15 05		Mid-section grid reference if different from designated site: Date 7.5.1994 Surveyor name: PAUL HENRIE (10)	
Are conditions affecting survey?		No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>		If yes, state:	
Bed of river visible?		No <input type="checkbox"/> partially <input checked="" type="checkbox"/> entirely <input type="checkbox"/>		(tick one box)	
Photograph: general character?		No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>		(tick one box)	
Photograph of channel measurement site?		No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>		(tick one box)	
Site surveyed from:		left bank <input checked="" type="checkbox"/> right bank <input type="checkbox"/> both banks <input checked="" type="checkbox"/> channel <input type="checkbox"/>			
C. PREDOMINANT VALLEY FORM (tick one box only)			D. PREDOMINANT CHANNEL FORM (tick one box only)		
 <input type="checkbox"/> vee			<input type="checkbox"/> predominantly culverted		
 <input type="checkbox"/> concave/bowl			<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)		
 <input type="checkbox"/> stepped valley floor (terraced)			<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned		
 <input checked="" type="checkbox"/> symmetrical			<input type="checkbox"/> open, but predominantly artificially dug (eg, mill leat, dyke)		
 <input type="checkbox"/> asymmetrical			<input type="checkbox"/> not artificial, but dammed		
 <input type="checkbox"/> gorge			<input checked="" type="checkbox"/> no obvious modification ('semi-natural')		
E. NAVIGATION (tick one box only)					
Is there a functioning navigation?		No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>		Don't know <input type="checkbox"/>	
F. PREDOMINANT FLOW TYPE (tick one box only)					
torrential/whitewater <input type="checkbox"/>		riffle-pool <input checked="" type="checkbox"/>		static <input type="checkbox"/>	
step-pool/cascade <input type="checkbox"/>		approximately laminar <input type="checkbox"/>		impounded <input type="checkbox"/>	

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES: to be assessed every 2nd spot check within a 1m wide zone

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	NV									
Predominant bank material (one entry only)	GA	GA	GA	GA	SP	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	ES	ES	ES	ES	ES	ES	ES	ES	ES	ES
CHANNEL										
Predominant channel substrate (one entry only)	NV	SP	SP	SP	SP	SP	SP	SP	SP	NV
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	SP	SP	SP	SP	SP	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SB	SB	NO	PB	PB	PB	PB	V?	GC	ES

VEGETATION STRUCTURE: to be assessed every 2nd wide reaches. Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spotcheck key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	S	B	B	B	B	B	U	U	S
RIGHT BANK	C	U	U	C	B	B	B	U	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	NO	NO	NO	S	C	S	S	NO	NO

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (in 25% area) or / (occasional))

	1	2	3	4	5	6	7	8	9	10
None (tick as appropriate)										
Emergent macrophytes										
Emergent herbs										
Emergent rootbedges	✓	✓							✓	✓
Floating-leaved										
Free-floating										
Submersed									✓	✓
Emergent algae			✓						✓	✓

Use end column for overall assessment after 500m time (E or A)

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SWEET-UP OVER SHEET

ENTER SITE NUMBER

68

LAND USE WITHIN 100m OF RIVER: Use 8 for 33% banklength or 4 if present

	L	R		L
Brackish/salt of woodland			Bag, marsh, fen	
Coniferous plantation			Improved/semi-improved grass	
Moorland/heath			Tilled land	
Scrub/rough pasture			Suburban/urban development	

LINEAR EXTENT OF RIPARIAN ZONE: (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % =

Right bank: None ☐ Banklength % =

BANK PROFILES WITHIN 100m: Use 8 for 33% banklength or 4 if present

Natural/Unmodified	L	R	Artificial/Modified	L
Natural/Unmodified	77	6	Artificial/Modified	
Vertical + sea	2	✓	Reinforced - whole bank	
Steep (> 45°)	2		Reinforced - top only	
Gravel		✓	Reinforced - toe only	
Composite			Artificial two-stage	
			Poached	

EMBANKMENTS: (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = 0

Right bank: None ☐ Banklength % = 50

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	ASSOCIATED FEATURES (Tick one box per feature)				
None	<input type="checkbox"/> Left	<input type="checkbox"/> Right	E ≥ 33%	None	Present if
Isolated/battered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-coniferous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree masts	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Coniferous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES: Record actual number of RUFF, pools and point bars

Number of: Riffles = 2	Pools = 1	Unvegetated Point Bars = 2	Vegetated Point Bars = 1
Waterfall/slide	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Terraced flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (straight)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Static flow (stark)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EC	FA	EA	FA	FA	GP	FA	FA	EA	EA
- bank modification (one entry only)	R3	L3	L3	AS	AS	AS	AS	AS	AS	AS
- bank feature(s)	L3	L3	L3	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	AS	SC	SC	SC	SC	SC	SC	SC	SC	SC
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	R3	R3	R3	R3	R3	R3	R3	R3	R3	R3
- channel feature(s)	L3	L3	L3	L3	L3	L3	L3	L3	L3	L3
RIGHT BANK										
Predominant bank material (one entry only)	EC	FA	EA	FA	FA	GP	FA	FA	EA	EA
- bank modification (one entry only)	R3	R3	R3	R3	R3	R3	R3	R3	R3	R3
- bank feature(s)	L3	L3	L3	L3	L3	L3	L3	L3	L3	L3

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	U	S	U	S	C	U	S	U	U
LEFT BANK	U	S	U	S	U	C	U	S	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	U	U	U	U	U	U	U	U	U

I-2.3 CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only B = 33% cover or more)

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m

ENTER SITE NUMBER 7

LAND USE WITHIN 50m OF RIVER (tick E = 33% banklength or A if present)

	L	R		L
Broadleaf/woodland			Bag, marsh, fen	
Coniferous plantation			Improved/semi-improved grass	
Moorland/heath			Tilled land	
Scrub/rough pasture			Suburban/urban development	

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 0 Right bank None ☐ Banklength % = 0

BANK PROFILES WITHIN 500m: On (E = 33% banklength or A if present)

	L	R		L
Natural/unmodified			Artificial/modified	
Vertical/undercut			Recessed	
Vertical + toe			Reinforced - whole bank	
Slope (>45°)			Reinforced - top only	
Gentle			Reinforced - toe only	
Composite		Artificial two-stage		
			Poached	

M RIPARIAN PLANTMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 0 Right bank None ☐ Banklength % = 0

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)		ASSOCIATED FEATURES (tick one box per feature)	
None	<input type="checkbox"/>	E ≥ 33%	None
Isolated/scattered	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
		Woody debris	<input type="checkbox"/>

O NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 10	Pools = 1	Unvegetated Point Bars = 0	Vegetated Point Bars = 1
Tick one box per feature	None	Present	None
Waterfall/cascade	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.15	Bankfull height (m)
Bank height if different (m)	2.10	Bank height if different (m)
Embanked height (m)	0.25	Embanked height (m)

Bed material at site is: consolidated ☐ cluses: algal growth compact, stable
unconsolidated ☐ cluses: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick boxes)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None
Recessioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

W SPECIAL FEATURES (if obvious, adjacent habitats of high interest, unusual sightings)

X RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) None of them ☐

Y TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

A BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

B FIELD SURVEY DETAILS (Complete all questions)

Site number: 700 River: EY B202 Mid-section grid reference if different from designated site:

Date: 24.1.1994 Start time: 11.45 Surveyor name: 0316 HUNTER/JAYE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D PREDOMINANT CHANNEL FORM (tick one box only)







predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but recessioning and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☐

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

RIVER HABITAT SURVEY: 1994 VERIFICATION		Page 1 of 1
29 April 1994		
A. BACKGROUND INFORMATION <i>This information is being collected separately.</i>		
Altitude(m) Solid geology Distance from source(km)	Slope Drift geology Mean Annual Flow category (1-10) Planform category	
B. FIELD SURVEY DETAILS <i>Complete all questions</i>		
Site number: 7.20 River CLYDEBORG Mid-section grid reference (if different from designated site):		
Date 01.5.1994 Start time: 1430 Surveyor name: PAUL HENNILL		
Are conditions affecting survey? No <input type="checkbox"/> Yes <input type="checkbox"/> <i>If yes, state</i>		
Bed of river visible? No <input type="checkbox"/> partially <input type="checkbox"/> entirely <input type="checkbox"/> <i>(tick one box)</i>		
Photograph: general character? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> <i>(tick one box)</i>		
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> <i>(tick one box)</i>		
Site surveyed from: left bank <input checked="" type="checkbox"/> right bank <input type="checkbox"/> both banks <input type="checkbox"/> channel <input type="checkbox"/>		
C. PREDOMINANT VALLEY FORM <i>(tick one box only)</i>		D. PREDOMINANT CHANNEL FORM <i>(tick one box only)</i>
 <input type="checkbox"/> vee	• predominantly culverted <input type="checkbox"/>	
 <input type="checkbox"/> concave/bowl	• open, but bed or banks predominantly artificial (eg bar reinforced) <input type="checkbox"/>	
 <input type="checkbox"/> stepped valley floor (terraced)	• open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/>	
 <input type="checkbox"/> symmetrical	• open, but predominantly artificially dug (eg mill leat, dyle) <input type="checkbox"/>	
 <input checked="" type="checkbox"/> asymmetrical	• not artificial, but dammed <input type="checkbox"/>	
 <input type="checkbox"/> gorge	• no obvious modification ('semi-natural') <input checked="" type="checkbox"/>	
NAVIGATION <i>(tick one box only)</i>		
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>		
PREDOMINANT FLOW TYPE <i>(tick one box only)</i>		
potential white water <input type="checkbox"/>	riffle pool <input checked="" type="checkbox"/>	static <input type="checkbox"/>
step-pool cascade <input type="checkbox"/>	approximately laminar <input type="checkbox"/>	impounded <input type="checkbox"/>

29 April 1994

RIVER HABITAT SURVEY: 1994 VERIFICATION

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SWEEP-UP OVER 500m

ENTER SITE NUMBER

72

LAND USE WITHIN 50m OF RIVER

Use E (≥ 33% banklength) or / if present

	L	R		L
Broadleaf/modified woodland		✓	Bog, marsh, fen	
Coniferous plantation			Improved/semi-improved grass	
Moorland/heath			Titled land	
Scrub/rough pasture			Suburban/urban development	E

LINEAR EXTENT OF RIPARIAN ZONE

tick "none" box or estimate percentage banklength if present

Left bank	None	Banklength % = 12	Right bank	None	Banklength % = 50
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BANK PROFILES WITHIN 500m

Use E (≥ 33% banklength) or / if present

Natural/modified	L	R	Artificial/modified	L	R
Vertical/undercut	77		Recessed		✓
Vertical + toe	7		Reinforced - whole bank		✓
Steep (> 25°)		E E	Reinforced - top only		
Gentle		✓	Reinforced - ice only		
Composite			Artificial re-stage		
			Pitched		

EMBANKMENTS

tick "none" box or estimate percentage banklength if present

Left bank	None	Banklength % =	Right bank	None	Banklength % =
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EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)	Left	Right	E ≥ 33%	ASSOCIATED FEATURES (tick one box per feature)		
None	<input type="checkbox"/>	<input type="checkbox"/>		Shading of channel	None	✓ Present
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>		Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>		Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>		Fallen trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Woody debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES

Record actual number of riffles, pools and point bars

Number at Riffles = 4	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =	
Tick one box per feature	None Present	None Present	None Present	
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input checked="" type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Algae islands	<input checked="" type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input checked="" type="checkbox"/>
Emerged vegetation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vegetated side bar	<input checked="" type="checkbox"/>
Emergent vegetation	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

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DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.80	Bank full width (m)	54.0	Bank full height (m)	0.40
Bank height if different (m)	2.30	Water width (m)	15.56	Bank height if different (m)	0.40
Embanked height (m)		Water depth (m)	0.50	Embanked height (m)	

Bed material at site is: consolidated ☐ clay: s'gal growth compact, stable
unconsolidated ☒ clay: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)
Significant tributary within 500m length? No ☐ Yes ☒

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate
None ☒ Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)
BANKS: L ☐ R ☒ CHANNEL: ☒
Revetting ☐ ☐ Dredging ☐
Bank-moving ☐ ☐ Weed-cutting ☐
Enhancement ☐ ☐ Enhancement works ☐ Stone ☐

T CHOKED CHANNEL
Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance
Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

V BRIEF DESCRIPTIVE SENTENCE Indicate if spot checks representative of site as a whole
Spot checks representative of site: PAUL RIVER SECTION THREE LIVES

W SPECIAL FEATURES eg exposed, adjacent habitat of high interest, incidental sightings
PAUL RIVER IS MAINTAINED WITHIN RESERVE: NUMEROUS NEST BOXES.

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site
Number (1-14) ☒ None of them ☐

Y TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY AND STAPLED, THEN RETURN TO:
PETER FOX, 10 NORTH WEST ROAD, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 3JR
HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RIVER 7-10-4331; ANDREW BROOKES 7-25-5311

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A BACKGROUND INFORMATION This information is being collected separately
Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B FIELD SURVEY DETAILS Complete all questions
Site number: 722 River: PAUL Mid-section grid reference if different from designated site:
Date: 18.1.4.1994 Start time: 1030 Surveyor name: PAUL HENVILLE
Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐
concave/bow ☒
stepped valley floor (terraced) ☐
symmetrical ☐
asymmetrical ☐
gorge ☐

D PREDOMINANT CHANNEL FORM (tick one box only)
predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg mill leat, dyle) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☒

E NAVIGATION (tick one box only)
Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)
torrential/whitewater ☐ riffle-pool ☒
step-pool cascade ☐ approximately laminar ☐ static impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)
Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)
Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	SC	SC	NO	NO	NO	NO	SC
CHANNEL										
Predominant channel substrate (one entry only)	EO	EO	CO	CO	CO	GP	CO	GP	CO	EO
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	AL	RE	AL	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	MB	NO	NO	MB	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	GP	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	SC	EC	SC	NO	NO	SC	SC	NO

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only
B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	U	NO	NO	S	NO	NO	C	C	C
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	S	S	S	S	S	S

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry: use E (ca 33% area) or J (present))
NONE (tick as appropriate)
Liverworts/mosses ☒
Emergent herbs ☒
Emergent reeds/sedges ☒
Floating-leaved ☒
Free-floating ☒
Amphibious ☒
Submerged ☒
Flowering plants ☒

Use end column for overall assessment over 300m line E or J

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SWEET-UP OVER 500m ENTER SITE NUMBER: 72

J LAND USE WITHIN 50m OF RIVER Use E (ca 33% banklength) or J (if present)
Broadleaved woodland ☐ L ☐ R ☐
Coniferous plantation ☐ Beg. marsh, fen ☐
Moorland/heath ☐ Improved/semi-improved grass ☐
Scrub/heath pasture ☐ Tilled land ☐
Suburban/urban development ☐

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)
Left bank: None ☐ Banklength = 40 Right bank: None ☐ Banklength = 5

L BANK PROFILES WITHIN 50m Use E (ca 33% banklength) or J (if present)
Natural/unmodified ☐ L ☐ R ☐
Vertical undercut ☒ Artificially modified ☐
Vertical + toe ☒ Resectioned ☐
Steep (> 45°) ☒ Reinforced - whole bank ☐
Grills ☒ Reinforced - top only ☐
Composite ☒ Reinforced - toe only ☐
Artificial two-stage ☐
Pouched ☐

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)
Left bank: None ☒ Banklength = Right bank: None ☐ Banklength =

N EXTENT OF TREES AND ASSOCIATED FEATURES
TREES (tick one box per bank)
None ☐ Left ☐ Right ☐ E > 33%
Isolated/scattered ☐ Shading of channel ☐
Regularly spaced, single ☐ Overhanging boughs ☐
Occasional clumps ☐ Exposed bankside roots ☐
Semi-continuous ☐ Underwater tree roots ☐
Continuous ☐ Fallen trees ☐
Woody debris ☐

O NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars
Number of riffles = 10 Pools = Unvegetated Point Bars = Vegetated Point Bars =
Tick one box per feature
Waterfall/cascade ☒ None Present E
Torrential flow (rapids) ☐ Unvegetated mid-channel bars ☐
Laminar flow (run/glides) ☐ Vegetated mid-channel bars ☐
Sustained flow (slack) ☐ Mature island(s) ☐
Exposed bedrock ☐ Unvegetated side bar ☐
Exposed boulders ☐ Vegetated side bar ☐
Artificial ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	GP	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	SG	NO	SC	NO	PD	SC	SC	SC
CHANNEL										
Predominant channel substrate (see entry only)	NV	GP	CO	CO	CO	CO	GP	GP	GP	GP
Predominant flow type (see entry only)	PO	AL	AL	AL	AL	AL	RF	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	VR	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SC	SC	SC	SC	SC	EC	NO	SC	EC	NO

H VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	NO	NO	NO	NO	NO	S	S	NO	NO	NO
LEFT RIPARIAN ZONE (if none, enter NO)										
RIGHT BANK	S	S	S	S	S	U	B	U	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	U	C	S	R	B	S	U	S

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E (ca 33% area) or U (present))

	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER 7

J LAND USE WITHIN 50m OF RIVER (tick "none" box or estimate percentage banklength if present)

	L	R	L
Broadleaf/mixed woodland			
Coniferous plantation			
Moorland/heath			
Scrub/rough pasture			
Bog, marsh, fen			
Improved/semi-improved grass			
Tilled land			
Suburban/urban development			

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 5 Right bank None ☐ Banklength % = 2

L BANK PROFILES WITHIN 500m (tick "none" box or estimate percentage banklength if present)

	L	R	L
Natural/unmodified			
Vertical undercut			
Vertical + toe			
Steep (> 45°)			
Gentle			
Composite			
Artificial/modification			
Revetment			
Reinforced - whole bank			
Reinforced - top only			
Reinforced - toe only			
Artificial toe outcrop			
Poached			

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	None	Present	E
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present	E
Number of: Riffles = 10 Pools = 5 Unvegetated Point Bars = 3 Vegetated Point Bars = 2			
Waterfall/cascade			
Torrential flow (rapids)			
Laminar flow (run/glide)			
Stille flow (slack)			
Unvegetated mid-channel bars			
Vegetated mid-channel bars			
Point bars (lateral)			
Unvegetated side bar			

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DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.35	Bank full width (m)	8.0
Bank height if different (m)	0.30	Water width (m)	4.0
Embarked height (m)		Water depth (m)	0.03
Bed material at site is:			
consolidated	<input type="checkbox"/>	close: algal growth compact, stable	
unconsolidated	<input type="checkbox"/>	close: fresh clean gravel, easily dislodged, loose	
unknown	<input type="checkbox"/>	inaccessible or not visible (eg turbid water)	
Location of measurements is:			
riffle	<input checked="" type="checkbox"/>	run or glide	<input type="checkbox"/>
other	<input type="checkbox"/>	(tick one box)	

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick "none" where appropriate)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

	L	R	CHANNEL
BANKS			
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Revetment	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-culling
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
State			

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

Hill stream in riparian woodland on left bank. Spot affect site

W SPECIAL FEATURES (eg known adjacent habitats of high interest; incidental highlights)

X RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, HARRINGTON, NAA 116. HELPLINE NUMBERS: PETER FOX 721-2140; PAUL KAYEN 710-4343; ANDREW BROOKES 725-5913

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

A BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B FIELD SURVEY DETAILS (Complete all questions)

Site number: 723 River CL4W Mid-section grid reference if different from designated site:

Date 11.5.1994 Start time: 16.20 Surveyor name: PAUL MEYLLIG

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl

stepped valley floor (terraced)

symmetrical

asymmetrical

gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted

open, but bed or banks predominantly artificial (eg box reinforced)

open, little or no obvious reinforcement, but resectioned and/or realigned

open, but predominantly artificially dug (eg. mill leat, dyke)

not artificial, but dammed

no obvious modification ("semi-natural")

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

turbulent

laminar

approximately laminar

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

F. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.6	Bank full width (m) 4.0	Bank full height (m) 0.6
Bank height if different (m) 1.0	Water width (m) 2.0	Bank height if different (m) 0.8
Embanked height (m)	Water depth (m) 0.4	Embanked height (m)

Bed material at site is: consolidated ☒ clast: algal growth compact, stable
 unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

G. TRIBUTARIES (tick one box only)
 Significant tributary within 500m length? No ☒ Yes ☐

H. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None	Number of	Culverts	Weirs	Bridges	Outfalls

I. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

J. CHOKED CHANNEL
 Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

K. NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

L. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
 SPOT CHECKS ARE REPRESENTATIVE. STAGNANT STREAM THROUGH SHEEP PASTURE. Stable banks and bed. Little sign of erosion or deposition.

M. SPECIAL FEATURES eg obvious adjacent habitat of high interest, incidental sightings

N. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

O. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY AND SIGNED. RETURN TO THE FIELD OFFICE OR THE REGIONAL OFFICE OF THE ENVIRONMENT AGENCY. (If you are a member of the public, please return to the nearest Environment Agency office.)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 725 River BYKE Beck, Mid-section grid reference if different from designated site:
 Date 13.1.94 Start time: 1200 Surveyor name: PAUL HENVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)
 Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater
☐ riffle pool
☒ static
☐ step-pool cascade
☐ approximately laminar
☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

F. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.75	Bank full width (m) 12	Bank full height (m) 0.75
Bank height if different (m) 0.3	Water width (m) 4.0	Bank height if different (m)
Embanked height (m)	Water depth (m) 0.20	Embanked height (m) 4.5m

Bed material at site is: consolidated ☒ clast: algal growth compact, stable
 unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

G. TRIBUTARIES (tick one box only)
 Significant tributary within 500m length? No ☒ Yes ☐

H. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None	Number of	Culverts	Weirs	Bridges	Outfalls

I. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

J. CHOKED CHANNEL
 Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

K. NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

L. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
 SPOT CHECKS ARE REPRESENTATIVE. Slowly meandering stream confined in all night bank. Numerous channel bars and side channels.

M. SPECIAL FEATURES eg obvious adjacent habitat of high interest, incidental sightings

N. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

O. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY AND SIGNED. RETURN TO THE FIELD OFFICE OR THE REGIONAL OFFICE OF THE ENVIRONMENT AGENCY. (If you are a member of the public, please return to the nearest Environment Agency office.)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 724 River Mid-section grid reference if different from designated site:
 Date 11.1.94 Start time: 1510 Surveyor name: PAUL HENVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)
 Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater
☐ riffle pool
☒ static
☐ step-pool cascade
☐ approximately laminar
☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m ENTER SITE NUMBER 725

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or J (if present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 65 Right bank: None ☐ Banklength % = 20

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J (if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical undercut			Recessed		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)		ASSOCIATED FEATURES (Tick one box per feature)	
None	Left	Right	E ≥ 33%
Isolated/scattered			Shading of channel
Regularly spaced, single			Overhanging boughs
Occasional clumps			Exposed bankside roots
Semi-continuous			Underwater tree roots
Continuous			Fallen trees
			Woody debris

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of: Riffles = 5 Pools = 1 Unvegetated Point Bars = 0 Vegetated Point Bars = 0	None	Present	None	Present
Waterfall/cascade			Unvegetated mid-channel bars	
Torrential flow (rapids)			Vegetated mid-channel bars	
Laminar flow (run/glide)			Mature island(s)	
Stable flow (flood)			Unvegetated side bar	
Exposed bedrock			Vegetated side bar	
Exposed boulders			Artificial	

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.10	Bankfull width (m)
Bank height if different (m)	0.5	Water width (m)
Embanked height (m)		Water depth (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then totals tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None			None
Recessing			Dredging
Bank-mowing			Wet-dredging
Enhancement			Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

The stream is a first order stream, flowing through a rural landscape, with a mix of natural and artificial features.

W. SPECIAL FEATURES (if obvious, adjacent habitats of high interest, incidental sightings)

None

X. RIVER TYPING Refer to photographs of river type and indicate which resembles the river

Number (1-14) 5/10 None of them ☐

Y. TIME TAKEN 1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1JH. TELEPHONE NUMBERS: PETER FOX 2-31-3140; PAUL RAVEN 7-10-4043; ANDREW BROOKES 7-35-4712.

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	GA	EA	EA	GA	GA	EA	GA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	EC	SC	SC	SC	SC	SC	SC	NO	SC	SC
CHANNEL										
Predominant channel substrate (see entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	GA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	NO	SC	SC	SC	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT RIPARIAN ZONE (if none, enter NO)	U	S	S	U	B	U	B	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	S	NO	U	B	S	U	B	S	C

I. CHANNEL VEGETATION TYPES (tick in relevant boxes with one entry only E (≥ 33% banklength) or J (if present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Emergent herbs										
Emergent reeds/rushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SWEET-UP OVER 500m ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or J (if present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % = 20

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J (if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical undercut			Recessed		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)		ASSOCIATED FEATURES (Tick one box per feature)	
None	Left	Right	E ≥ 33%
Isolated/scattered			Shading of channel
Regularly spaced, single			Overhanging boughs
Occasional clumps			Exposed bankside roots
Semi-continuous			Underwater tree roots
Continuous			Fallen trees
			Woody debris

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of: Riffles = 0 Pools = 0 Unvegetated Point Bars = 0 Vegetated Point Bars = 0	None	Present	None	Present
Waterfall/cascade			Unvegetated mid-channel bars	
Torrential flow (rapids)			Vegetated mid-channel bars	
Laminar flow (run/glide)			Mature island(s)	
Stable flow (flood)			Unvegetated side bar	
Exposed bedrock			Vegetated side bar	
Exposed boulders			Artificial	

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m

ENTER SITE NUMBER 737

LAND USE WITHIN 50m OF RIVER. Use E (≥ 33% banklength) or J if present

	L	R		L	R
Broadleaved woodland	6	6	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		6
Moorland/heath			Tilled land	6	
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength S = 100 Right bank None ☐ Banklength R = 30

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/handcut	7	7	Resectioned		7
Vertical + toe	7	7	Reinforced - whole bank		7
Step (> 45°)	5	8	Reinforced - top only		7
Geotile	7	6	Reinforced - toe only		7
Composite			Artificial two-stage		7
			Poached		7

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength S = Right bank None ☐ Banklength R =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present E
None			Shading of channel		7
Isolated/scattered			Overhanging boughs		7
Regularly spaced, single			Exposed bankside roots		7
Occasional clumps			Underwater tree roots		7
Semi-continuous			Fallen trees		7
Continuous	7	7	Woody debris		7

ASSOCIATED FEATURES (Tick one box per feature)

None Present E

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present E		None	Present E
Number of Riffles = 7			Unvegetated Point Bars = 1		
Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Mature island(s)		
Static flow (flick)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.15	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ close: algal growth compact, stable
unconsolidated ☐ close: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES. Use tally method, then total tick "none" where appropriate

None ☐ Number of Culverts = Weirs = 1 Bridges = 2 Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT. Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None	7	7	None
Resectioning			Dredging
Bank-roaming			Weed-cutting
Enhancement			Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present, tick "none" if not)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE. Indicate if spot check representative of site as a whole

Small stream, mostly straight, with some meanders. Shaded channel. Extensive woody debris, fallen trees.

W. SPECIAL FEATURES. If obvious, adjacent to high stream, including high water

Flow is slow, with some riffles and pools. No obvious high water.

X. RIVER TYPING. Refer to photographs of river types and indicate which resembles the river

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION. This information is being collected separately

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Planform category

D. FIELD SURVEY DETAILS. Complete all questions

Site number: 737 River: WOLLAH Mid-section grid reference if different from designated site:

Date: 24/4/1994 Start time: 8:30 Surveyor name: PAUL RAYEN / RILEY HUGHES (PFR)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (10)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (11)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ("semi-natural") ☒

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ("semi-natural") ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	CL	CL	GA	CL	GA	GA	GA	BR
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SL	SL	SL	SL	SL	CL	SL	SL	SL	SL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	CL	CL	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	S	S	S	S	S	S	S	S	S
LEFT BANK	U	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; use E (≥ 33% area) or J (present) etc)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J. SWEEP-UP OVER 500m ENTER SITE NUMBER 739

K. LAND USE WITHIN 500m OF RIVER (Use E (≥ 33% banklength) or J if present)

	L	R		L	R
Broadleaf/woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20

Right bank None ☐ Banklength % = 50

M. BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or J if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

N. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20

Right bank None ☐ Banklength % = 50

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		None	Present E
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

P. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools, and point bars)

Number of Riffles = 10 Pools = 10 Unvegetated Point Bars = 2 Vegetated Point Bars = 2

	None	Present E		None	Present E
Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapid)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Mature island(s)		
Suave flow (slack)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

Q. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ clast: algal growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

S. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☐ Number of Culverts = 1 Weirs = 1 Bridges = 1 Outfalls = 1

T. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-moving			Wood-cutting
Enhancement			Enhancement works

U. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES (tick box(es)) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

W. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a whole)

X. SPECIAL FEATURES (of obvious, adjacent habitats of high interest; incidental sightings)

Y. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Z. TIME TAKEN 75 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) 739 Slope 1:5 Mean Annual Flow category (1-10) 10

Solid geology Drift geology Planform category 10

Distance from source (km) 10

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 739 River: 1:5 Mid-section grid reference if different from designated site: 10

Date: 25.4.1994 Start time: 16.15 Surveyor name: P. Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state 10

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 10

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 10

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GN	GT	GP	GP	GP	GP	GP	GP	GP	GP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GN	GN	GN	GN	GN	GN	GN	GN	GN	GN
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)										
None (tick as appropriate)										
Living/woody/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

B FIELD SURVEY DETAILS Complete all questions

Site number: 740 River name: B&C Mid-section grid reference if different from designated site:

Date: 24.7.1994 Start time: 15.00 Surveyor name: P. C. M. C. & J. A. P. G.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (26)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	GA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	EC	EC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	10	10	10	10	10	10	10	10	10	10
- channel feature(s)	10	10	10	10	10	10	10	10	10	10
RIGHT BANK										
Predominant bank material (one entry only)	EA	GA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	10	10	10	10	10	10	10	10	10	10

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry: tick E (ca 33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3

SWEET SPOT OVER 500m ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER (use E (ca 33% banklength) or / if present)

	L	R
Broadleaf/mixed woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Bog, marsh, fen		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

N LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 30 Right bank None ☐ Banklength % = 30

L BANK PROFILES WITHIN 500m (tick E (ca 33% banklength) or / if present)

	L	R
Natural/unmodified		
Vertical/undercut		
Vertical + toe		
Steep (>45°)		
Gentle		
Composite		
Artificial/unmodified		
Resectioned		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-steps		
Poached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present E
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of: Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Mature island(s)				
Unvegetated side bar				
Vegetated side bar				
Artificial				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	CHANNEL	RIGHT BANK
Bankfull height (m)	1.20	Bankfull height (m)
Bank height if different (m)		Bank height if different (m)
Embanked height (m)		Embanked height (m)
Water width (m)	6	
Water depth (m)	0.30	

Bed material at site is: consolidated ☒ unconsolidated ☐ unknown ☐ clays: algal growth compact, stable ☐ clays: fresh clean gravel, easily dislodged, loose ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none", where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick one(s)

	L	R	CHANNEL
None			
Resectioning			
Bank-moving			
Enhancement			
Dredging			
Weed-cutting			
Enhancement works			
State			

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a whole)

Spot checks representative of site or a whole

W SPECIAL FEATURES (if obvious, adjacent habitats of high interest; incidental sightings)

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Y TIME TAKEN 20 min

Check that this form has been completed correctly, and stapled, then return to: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAYN 7-10-4343; ANDREW BROOKS 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

SWEEP UP OVER 100m ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER Use 2 (in 25% ha) or 3 (if present)

	L	R		L	R
Broadleaved woodland			Bag, marsh, fen		
Coniferous plantation			Improved/improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % = 5

BANK PROFILES WITHIN 500m Use 2 (in 25% ha) or 3 (if present)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical undercut			Revetment		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Peatbed		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		None	Percent	B
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bankside roots			
Occasional clumps			Under-slab tree roots			
Semi-continuous			Fallen trees			
Continuous			Woody debris			

ASSOCIATED FEATURES (tick one box per feature)

	None	Percent	B
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Under-slab tree roots			
Fallen trees			
Woody debris			

NATURAL CHANNEL FEATURES Record aspect number of riffle, pool and point bars

	None	Percent	B
Unvegetated mid-channel bars			
Vegetated mid-channel bars			
Stagnant island(s)			
Unvegetated side bar			
Vegetated side bar			
Artificial			

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☒ else: algal growth compact, stable
unconsolidated ☐ else: fresh clean gravel, easily dislodged, loose
unknown ☐ loose/erodible or not visible (e.g. buried water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total: tick, none, where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	L	R	CHANNEL
None			None
Revetment			Dredging
Bank-moving			Wood-cutting
Enhancement			Enhancement works
			State

CHOSEN CHANNEL

Is 55% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (under 100 characters) (use of a comma is allowed)

Large slow flowing channel with a lot of silt and debris.

SPECIAL FEATURES (if above, describe habitat of high interest; horizontal alignment)

Part of old meander (with water) present on right bank.

RIVER TYPING Refer to photographs of river types and indicate which resembles the river

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2142; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-4711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION This information is being collected separately

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

FIELD SURVEY DETAILS Complete all questions

Site number: 747 River: WJWS Mid-section grid reference if different from designated site:

Date: 25/4/1994 Start time: 8:40 Surveyor name: Peter Fox/Bill Huxford

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) (20)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box) (21)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (e.g. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/white water ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	NO	NO	NO	NO	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	UV	UV	UV	UV	UV	UV	UV	UV	UV	UV
Predominant flow type (one entry only)	PL	PL	PL	PL	PL	PL	PL	PL	PL	PL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 1m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (tick in relevant boxes only; tick 2 (in 25% area) or 3 (if present))

NONE (tick as appropriate)

Liverworts/mosses										
Emergent hydrophytes										
Emergent submergents										
Flowering submergents										
Free-floating										
Amphibious										
Submerged - "soft" beds										
Filamentous algae										

Use end column for overall assessment over 500m (see C or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 762 River: Te mae Mid-section grid reference if different from designated site: Date: 11.5.1994 Start time: 0935 Surveyor name: PAUL KENNELLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ turbulent ☐ riffle pool ☒ static ☐ step pool cascade ☐ approximately laminar ☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GP	GP	GP	EA	EA	GP	GP	GP	GP	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	EC	FB	FB	EC	EC	EC	NO	NO	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	CO	CO	CO	CO	CO	CO	CO
Predominant flow type (one entry only)	AL	AL	RF	AL	RF	RF	RF	AL	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	MF	NO	NO	NO	VB	NO	VB	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	GP	EA	EA	GP	EA	GP	EA	EA
- bank modification (one entry only)	RE	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	PA	NO	SB	SB	EC	EC	NO	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	TS	TS	U	TS	TS	U	U	TS	U	U
RIGHT BANK	B	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	C	C	C	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E = 33% area or more)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Living roots/mosses										<input checked="" type="checkbox"/>
Emergent herbs										<input checked="" type="checkbox"/>
Emergent reeds/sedges										<input checked="" type="checkbox"/>
Floating-leaved										<input checked="" type="checkbox"/>
Free-floating										<input checked="" type="checkbox"/>
Amphibious										<input checked="" type="checkbox"/>
Submerged										<input checked="" type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER (tick E (≥ 33% banklength) or J if present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/rough pasture	<input checked="" type="checkbox"/>		Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % = 20

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut	<input checked="" type="checkbox"/>		Resectioned		
Vertical + toe	<input checked="" type="checkbox"/>		Reinforced - whole bank		
Steep (> 45°)	<input checked="" type="checkbox"/>		Reinforced - top only		
Gentle	<input checked="" type="checkbox"/>		Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

	Left	Right		Left	Right
None	<input checked="" type="checkbox"/>		Shading of channel		
Isolated/scattered	<input checked="" type="checkbox"/>		Overhanging boughs		
Regularly spaced, single	<input checked="" type="checkbox"/>		Exposed bankside roots		
Occasional clumps	<input checked="" type="checkbox"/>		Underwater tree roots		
Semi-continuous	<input checked="" type="checkbox"/>		Fallen trees		
Continuous	<input checked="" type="checkbox"/>		Woody debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Left	Right		Left	Right
Number of: Riffles = 8 Pools = 0 Unvegetated Point Bars = 4 Vegetated Point Bars = 0					
Waterfall/cascade	<input checked="" type="checkbox"/>		Unvegetated mid-channel bars		
Torrential flow (rapids)	<input checked="" type="checkbox"/>		Vegetated mid-channel bars		
Laminar flow (pool/slide)	<input checked="" type="checkbox"/>		Native island(s)		
Shall flow (slack)	<input checked="" type="checkbox"/>		Unvegetated side bar		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS In be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.75	Bank full width (m) 12.0	Bank full height (m) 1.0
Bank height if different (m) 0.75	Water width (m) 6.0	Bank height if different (m) 2.0
Embankment height (m)	Water depth (m) 0.10	Embankment height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then totals: tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick boxes

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES tick boxes (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE Indicate if spot checks representative of site as a whole

W. SPECIAL FEATURES eg osiers, different habitats of high interest, incidental sightings

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Y. SITE TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CAREFULLY AND SIGNED BY THE SURVEYOR

DATE OF SURVEY: 11.5.1994 SURVEYOR: PAUL KENNELLE

SWITCH-UP OVER 500m

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or J if present

ENTER SITE NUMBER **763**

J

Broadleaf/mixed woodland

Coniferous plantation

Moorland heath

Scrub/rough pasture

L

R

Bog, marsh, fen

Improved/semi-improved grass

Tilled land

Suburban/urban development

E

E

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **5**

Right bank None ☒ Banklength % =

L BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J if present

Natural/unmodified	L	R	Artificial/modified	L	R
• Vertical undercut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	• Reexcavated	<input type="checkbox"/>	<input type="checkbox"/>
• Vertical + toe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	• Reinforced - whole bank	<input type="checkbox"/>	<input type="checkbox"/>
• Steep (> 2:1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	• Reinforced - top only	<input type="checkbox"/>	<input type="checkbox"/>
• Gentle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	• Reinforced - toe only	<input type="checkbox"/>	<input type="checkbox"/>
• Composite	<input type="checkbox"/>	<input checked="" type="checkbox"/>	• Artificial two-stage	<input type="checkbox"/>	<input type="checkbox"/>
			• Peached	<input type="checkbox"/>	<input checked="" type="checkbox"/>

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % =

Right bank None ☐ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	L	R	ASSOCIATED FEATURES (Tick one box per feature)	E ≥ 33%	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

O NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles = **14** Pools = **3** Unvegetated Point Bars = **4** Vegetated Point Bars = **2**

Tick one box per feature	None	Present	E	None	Present	E
Waterfall/steaside	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laminar flow (puddles)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed gravel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated point bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed silt/clay	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated point bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION This information is being collected separately:

Altitude(m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source(km) Drift geology Platform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 777 River: River Grid Reference: Mid-section grid reference if different from designated site: Date: 26.1.5.1994 Start time: 8:50 Surveyor name: J. A. GUNN / R. L. H. (JFS)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 29

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 29

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
- bank modification (one entry only)	100	100	100	100	100	100	100	100	100	100
- bank feature(s)	SC	100	SC	100	100	100	100	100	100	100
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	100	100	100	100	100	100	100	100	100	100
- channel feature(s)	100	100	100	100	100	100	100	100	100	100
RIGHT BANK										
Predominant bank material (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
- bank modification (one entry only)	100	100	100	100	100	100	100	100	100	100
- bank feature(s)	100	100	100	100	100	100	100	100	100	100

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

R = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: B (2-33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use F or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP UP OVER 500m ENTER SITE NUMBER: 777

LAND USE WITHIN 50m OF RIVER Use E (2-33% banklength) or / if present

	L	R		L	R
Broadleaf/mixed woodland			Beg, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/tough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 9

BANK PROFILES WITHIN 500m Use E (2-33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	E ≥ 33%	None	Present E
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (tick one box per feature)

	None	Present E
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	None	Present E	Unvegetated Point Bars	Vegetated Point Bars
Number of Riffles = 2				
Number of Pools = 7				
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

J. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☒ clastic: algal growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

K. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

L. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick 'none' where appropriate

None	Number of	Culverts =	Weirs =	Bridges =	Outfalls =

M. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works
			Soil

N. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

O. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

P. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Very heavily shaded channel. Small riparian zone. Stream. Inactive, though there is a fair amount of algal growth.

Q. SPECIAL FEATURES (if relevant, indicate habitats of high interest, incidental sightings)

R. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

S. TIME TAKEN 70 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JE. HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 779 River: Joss Mid-section grid reference if different from designated site: _____
Date: 23.8.1994 Start time: 10.30 Surveyor name: P. Fox, R. Fox, A. Fox (23)
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	11	11	11	11	11	11	11	11	11	11
Predominant flow type (one entry only)	21	21	21	21	21	21	21	21	21	21
- channel modification(s)	10	10	10	10	10	10	10	10	10	10
- channel feature(s)	10	10	10	10	10	10	10	10	10	10
RIGHT BANK										
Predominant bank material (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank modification (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	10	10	10	10	10	10	10	10	10	10

H. VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only

R = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	10	10	10	10	10	10	10	10	10	10
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP UP OVER 500m ENTER SITE NUMBER: _____

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or / if present

	L	R		L	R
Broadleaf/mixed woodland			Bog/marsh, etc		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % = 10

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/cut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = _____ Right bank None ☐ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)		ASSOCIATED FEATURES (tick one box per feature)	
Left	Right	Left	Right
None		E ≥ 33%	
Isolated/scattered		Shading of channel	
Regularly spaced, single		Overhanging boughs	
Occasional clumps		Exposed bankside roots	
Semi-continuous		Underwater tree roots	
Continuous		Fallen trees	
		Woody debris	

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pool and point bars

Number of: Riffles = _____ Pools = _____		Unvegetated Point Bars = _____ Vegetated Point Bars = _____	
Left	Right	Left	Right
Waterfall/cascade		Unvegetated mid-channel bars	
Torrential flow (rapids)		Vegetated mid-channel bars	
Laminar flow (run/slides)		Mature island(s)	
Stable flow (slack)		Unvegetated side bar	
Exposed bedrock		Vegetated side bar	
Exposed boulders		Artificial	

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P. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☐ cluck: algal growth compact, stable
unconsolidated ☐ cluck: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☐ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wedge-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE Indicate if spot checks representative of site as a whole

Channel is a straight uniform section with a riffle bed. The channel is a straight uniform section with a riffle bed. The channel is a straight uniform section with a riffle bed.

W. SPECIAL FEATURES eg exsors, adjacent habitats of high interest; incidental sightings

None ☒ (tick one box)

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN _____

Z. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYEN 7-10-4313; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m ENTER SITE NUMBER 721

J. LAND USE WITHIN 50m OF RIVER. Use E (≥ 33% banklength) or / if present

	L	R		L	R
Broadleaf/woodland	E		Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		E
Moorland/heath			Tilled land	E	
Scrub/brough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m. Use E (≥ 33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut	E		Resectioned		E
Vertical + toe	E		Reinforced - whole bank		
Slope (> 45°)	E		Reinforced - top only		
Gentle	E		Reinforced - toe only		
Composite	E		Artificial in o-stage		
			Postbed		

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	Associated Features (Tick one box per feature)
None	<input type="checkbox"/>	<input type="checkbox"/>	E ≥ 33% <input type="checkbox"/> None <input type="checkbox"/> Present <input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel <input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs <input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots <input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots <input type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fallen trees <input type="checkbox"/>
			Woody debris <input type="checkbox"/>

O. NATURAL CHANNEL FEATURES. Record actual number of riffles, pools and point bars

	Number of Riffles = 0	Pools = 0	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swile flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK			
Bankfull height (m)	1.50	Bankfull width (m)	6.0	Bankfull height (m)	1.5
Bank height if different (m)	1.75	Water width (m)	5.0	Bank height if different (m)	3.30
Embanked height (m)	No	Water depth (m)	0.2	Embanked height (m)	No

Bed material at site is: consolidated ☐ class: silt/clay growth compact, stable
unconsolidated ☒ class: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES. Use only method, then total, tick 'none' where appropriate

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 1

S. EVIDENCE OF RECENT MANAGEMENT. Observe signs, tick 'none' if appropriate

BANKS	L	R	CHANNEL	
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	<input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE. Indicate if spot checks representative of site as a whole

Well cut at weir on L.B. - P.B. sectioned. Slow flowing river. No silt and gravel bed. Spot check.

W. SPECIAL FEATURES. eg exposed adjacent habitats of high interest, historical significance

X. RIVER TYPING. Refer to photographs of river types and indicate which resembles the site

Number (1-14) 13 None of them ☐

Y. TIME TAKEN 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HB. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-10-4043; ANDREW BROOKES 7-35-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION. This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS. Complete all questions

Site number: 721 River E. 1.1 km Mid-section grid reference if different from Grid Reference: TL104-725 Bank designated site: E

Date: 25.5.1994 Start time: 10.45 Surveyor name: Paul Hewitt / J. R. Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box) 36

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 35

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
- bank modification (one entry only)	No	No	No	No	No	No	No	No	No	No
- bank feature(s)	No	No	No	No	No	No	No	No	No	No
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANK										
Predominant bank material (one entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only. Use E (≥ 33% area) or / if present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Living roots/mosses										
Emergent herbs										
Emergent sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or /)

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SWEEP-UP OVER 500m ENTER SITE NUMBER 784

LAND USE WITHIN 500m OF RIVER (tick one box)

Deciduous/semi-deciduous woodland	Bag. marsh, fen	L	R	L	R
Coniferous plantation	Improved/semi-improved grass				
Moorland/heath	Tilled land			E	F
Scrub/rough pasture	Suburban/urban development				

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 98 Right bank None ☐ Banklength % = 15

USING BANK PROFILES WITHIN 500m (tick one box)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	<input checked="" type="checkbox"/>		Recessed		<input checked="" type="checkbox"/>
Vertical + toe	<input checked="" type="checkbox"/>		Reinforced - whole bank		<input checked="" type="checkbox"/>
Slope (>45°)	<input checked="" type="checkbox"/>		Reinforced - top only		<input checked="" type="checkbox"/>
Grass	<input checked="" type="checkbox"/>		Reinforced - toe only		<input checked="" type="checkbox"/>
Composites	<input checked="" type="checkbox"/>		Artificial two-stage		<input checked="" type="checkbox"/>
			Poached		<input checked="" type="checkbox"/>

EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None	Isolated/scattered	Regularly spaced, single	Occasional clumps	Semi-continuous	Continuous
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

ASSOCIATED FEATURES (tick one box per feature)

Shading of channel	Overhanging branches	Exposed bankside roots	Underwater tree roots	Fallen trees	Woody debris
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles	Pool	Unvegetated point bars	Vegetated point bars
Tick one box per feature	None	Present	Present
Waterfall/cascade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Terraced flow (rapid)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Laminar flow (pool/glide)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stale flow (slack)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bankrock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed banksoil	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across 1 site)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
2.0	10.0	2.0
Bank height if different (m)	Water width (m)	Bank height if different (m)
	6.0	
Embankment height (m)	Water depth (m)	Embankment height (m)
	1.5	

Bed material at site is: consolidated ☐ chest: slight growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use Gully method, then total: tick "none" where appropriate)

Name	Number	Culverts	Weirs	Bridges	Outfalls
				2	

EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Recessing	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			State

CHOTED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present; tick "none" if not present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (describe 1 spot check representative of site as a whole)

Deep uniform down with dense growth of submerged vegetation. Flow bank detectable for much of reach.

SPECIAL FEATURES (tick one box per feature)

RIVER TYPING (refer to photographs of river types and indicate which resembles the river)

Number (1-14) ☐ None of them ☐

TIME TAKEN? 50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 50A NORTH WEST ROAD, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431140; FAX: 01925 431141; ANDREW BROOKES 01925 431142

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Solid geology Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 784 River: OLD WBSY Mid-section grid reference if different from designated site:

Grid Reference: TL 466125

Date: 24.6.1994 Start time: 10.15 Surveyor name: J. B. A. F. B. M. A. P. H. E. N. V. I. C. E.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but recessed and/or realigned ☐ open, but predominantly artificially dug (eg. willow, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

turbulent/white water ☐ riffle-pool ☐ step-pool cascade ☐ approximately laminar ☒ stilled ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	SV	SV	SV	SV	SV	SV	SV	SV	SV	SV
Predominant channel substrate (one entry only)	SV	SV	SV	SV	SV	SV	SV	SV	SV	SV
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	ST	ST	ST	ST	ST
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide reach; fill in each box with one entry only)

none = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	E
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	S	S	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (tick all appropriate boxes; tick "none" if not present)

NONE (tick as appropriate)										
Emergent herbs	Alisma	Vallisneria								
Emergent sedges	Glyceria	Scirpus								
Flowering reeds	Phragmites									
Free-floating	Hydrilla									
Amphibious	Myrica									
Submerged	Elodea									
Flowering algae										

The red column for overall assessment over 500m (see E of 1)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 187 River: LARK Mid-section grid reference if different from designated site: _____
Grid Reference: TL 747735

Date: 24/5/1994 Start time: 10:30 Surveyor name: N. CRIDE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CS	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	CS	U	U	U	U	U	U	U	U	U
LEFT BANK	S	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER: 187

J. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or / (if present)

	L	R		L	R
Broadleaf/mixed woodland			Reed, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or / (if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)		ASSOCIATED FEATURES (Tick one box per feature)	
Left	Right	None	Present E
None		Shading of channel	
Isolated/scattered		Overhanging boughs	
Regularly spaced, single		Exposed bankside roots	
Occasional clumps		Underwater tree roots	
Semi-continuous		Fallen trees	
Continuous		Woody debris	

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of:	Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	None	Present E	None	Present E
Waterfall/cascade			Unvegetated mid-channel bars	
Torrential flow (rapids)			Vegetated mid-channel bars	
Laminar flow (run/glide)			Mature island(s)	
Static flow (slack)			Unvegetated side bar	
Exposed bedrock			Vegetated side bar	
Exposed boulders			Artificial	

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. DIMENSIONS AND INFLUENCES

Q. CHANNEL DIMENSIONS To be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
1.5	14.0	1.5
Bank height if different (m)	Water width (m)	Bank height if different (m)
	12.5	
Embankment height (m)	Water depth (m)	Embankment height (m)
3.2	1.0	3.4

Bed material at site is: consolidated ☐ clastic: algal growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

S. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☒ Number of: Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

T. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick one box)

BANKS	CHANNEL
None	None
Resectioning	Dredging
Bank-moving	Ward-cutting
Enhancement	Enhancement works

U. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

W. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Modified channel - spot checks good, although sections upstream had more weeds: gravel features.

X. SPECIAL FEATURES (eg. rapids, adjacent habitats of high interest, historical sightings)

Extensive reed bed on either side of river, many birds and good wildlife habitat.

Y. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

Z. TIME TAKEN 1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NEW NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140, PAUL RAYEN 7-10-4343, ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 746 River CAMBOR Mid-section grid reference if different from designated site: _____
Grid Reference: SW 667658
Date 10.1.1994 Start time: 10.10 Surveyor name J.H. BLACKBURN, N. GRIEVE
Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☒ Yes ☐ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	CL	EA	EA	GP	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	SC	VS	NO	VP	ES	SC	
CHANNEL										
Predominant channel substrate (one entry only)	BC	GP	BC	GP	BC	GP	BC	GP	BC	GP
Predominant flow type (one entry only)	RF	AL	AL	AL	RF	AL	AL	RF	RF	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	GP	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	EC	SC	SC	NO	NO	NO	EC	EC	PB	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = base of U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C	NO	NO	S	U	N	C
LEFT RIPARIAN ZONE (if none, enter NO)	E	C	C	S	NO	NO	S	U	N	C
LEFT BANK	S	S	S	B	S	U	S	B	S	
RIGHT BANK	B	S	S	B	S	U	B	B	S	
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	S	S	NO	NO	S	S	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E to 33% area or if present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Upland/moorland										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Flowering algae										

Use end column for overall assessment over 500m (use E or if present)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J. LAND USE WITHIN 50m OF RIVER Use E (to 33% banklength) or if present

	L	R		L	R
Broadleaf mixed woodland			Box, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/heath pasture	E	E	Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 70 Right bank: None ☐ Banklength % = 25

L. BANK PROFILES WITHIN 500m Use E (to 33% banklength) or if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut	7	7	Recessed		
Vertical toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial toe-stage		
			Recessed		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present E
Shading of channel		
Overhanging boughs		
Exposed bank-side roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	None	Present E	Unvegetated Point Bars	Vegetated Point Bars
Number of: Riffles = 14 Pools = 14 <td></td> <td></td> <td></td> <td></td>				
Waterfall/cascade				
Torrential flow (rapid)				
Laminar flow (run/glide)				
Shallow flow (shallow)				
Exposed bedrock				
Exposed boulders				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.7	Bankfull width (m)	5.5
Bank height at different (m)	1.5	Water width (m)	4.0
Embanked height (m)		Water depth (m)	0.25

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs; tick boxes

	L	R	CHANNEL
BANKS			
None			
Recessing			
Bank-mowing			
Enhancement			

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

Torrential 4.4 had some high water joining on right bank creating gravel delta. Difficult to assess whether riparian zone was present due to joining.

W. SPECIAL FEATURES eg osiers, adjacent habitats of high interest; incidental sightings

On right bank between 100m to 150m a small population of emergent.

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN 1.5 hours

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND SIGNED, THEN RETURN TO: PETER FOX, NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TE. HELPLINE NUMBER: PETER FOX 01243 440000; PAUL RAVEN 01243 440001; ANDREW PROBERTS 01243 440002

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

A. BACKGROUND INFORMATION (This information is being collected separately.)

Altitude (m) _____ Slope _____
 Solid geology _____ Drift geology _____
 Distance from source (km) _____ Mean Annual Flow category (1-10) _____
 Planform category _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 617 River: M50 Mid-section grid reference if different from designated site: _____
 Grid Reference: (Bampton O RANMUL)
 Date: 26.4.94 Start time: 10:15 Surveyor name: J.H. HILLMAN/SDY/7/94/4 (JFH)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 31

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 32

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☒ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☐ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whirlwater
☐ riffle-pool
☒ static
☐ step-pool cascade
☐ approximately laminar
☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 3m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
- bank feature(s)	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS
CHANNEL										
Predominant channel substrate (one entry only)	CP	CP	CP	CP	CP	CP	CP	CP	CP	CP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
- channel feature(s)	MS	MS	MS	MS	MS	MS	MS	MS	MS	MS
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
- bank feature(s)	VS	VS	VS	VS	VS	VS	VS	VS	VS	VS
I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch): Fill in each box with one entry only.										
H = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry: use E (≥ 33% cover) or V (present))										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

K. LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or V (if present))

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/brough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20 Right bank None ☐ Banklength % =

M. BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or V (if present))

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

N. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>

ASSOCIATED FEATURES (tick one box per feature)

	None	Present E
Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

P. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of	Unvegetated	Vegetated
Riffles	0	Point Bars	Point Bars
Pools	0	Unvegetated mid-channel bars	Vegetated mid-channel bars
Waterfall/cascade	0	Unvegetated side bar	Vegetated side bar
Torrential flow (rapids)	0	Artificial	
Laminar flow (run/glide)	0		
Stale flow (slack)	0		
Exposed bedrock	0		
Exposed boulders	0		

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Q. DIMENSIONS AND INFLUENCES

R. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

S. BED MATERIAL AT SITE

consolidated ☒ eluvial: algal growth compact, stable
 unconsolidated ☐ eluvial: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

T. LOCATION OF MEASUREMENTS (tick one box)

riffle ☒ run or glide ☐ other ☐ (tick one box)

U. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

V. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick 'none' where appropriate)

None ☒ Culverts = Weirs = Bridges = Outfalls =

W. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick boxes)

BANKS	CHANNEL
Resectioning	None
Bank-mowing	Dredging
Enhancement	Wood-cutting
	Enhancement works
	Silt

X. CHOSED CHANNEL

Is 33% or more of the channel over 500m choosed with vegetation? NO ☒ YES ☐

Y. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance.

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

Z. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Re-sectioned (isolated) clay channel. River channel narrow, depth a mix of natural, similar to a ditch. No evidence of any vegetation.

AA. SPECIAL FEATURES (eg exposed, adjacent habitats of high interest; localised sightings)

None

AB. RIVER TYPING (Refer to photographs of river types and indicate which resembles the river)

Number (1-14) ☐ None of these ☐

AC. TIME TAKEN

1 hr

AD. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FARCLOUGH HOUSE, WARRINGTON, WA4 1JR. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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DIMENSIONS AND INFLUENCES

P3. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle):

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.00	Bank full width (m)	21.5	Bank full height (m)	0.80
Bank height if different (m)	-	Water width (m)	19.5	Bank height if different (m)	-
Embanked height (m)	-	Water depth (m)	1.4	Embanked height (m)	-

Bed material at site is: consolidated ☐ clast: signal growth compact, stable
unconsolidated ☒ clast: fresh clean gravel, easily dislodged, loose
unknown ☒ clast: incisable or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

P4. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

P5. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)

Moss ☐ Number of Culverts = Weirs = 2 (tallies) Bridges = 1 Outfalls =

P6. EVIDENCE OF RECENT MANAGEMENT (Drawn signs not boxes)

BANKS	L	R	CHANNEL	
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	<input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/> State

P7. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

P8. NOTABLE NUISANCE PLANT SPECIES (tick boxes) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

P9. BRIEF DESCRIPTIVE SENTENCE (unless it has earlier representation of site as a whole)

Large island river section. No evidence of channel had been held back by bank. River was a separate channel in middle of lower section. 3rd channel runs parallel to 2nd.

P10. SPECIAL FEATURES (if obvious, adjacent habitats of high interest, incidental sightings)

downstream of current section. Old silt. 3rd channel with some cover of emergent vegetation adjacent on left bank.

P11. RIVER TYPING (refer to photographs of river types and describe which resembles the site)

Number (1-14) (1) None of them ☐

P12. TIME TAKEN 15 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BRONKES 7-21-6717

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 3
TEN SPOT CHECKS (~ 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G- PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	SA	SP	BC	EP	GT	SH	CH	OS	OA
- bank modification (one entry only)	N0	N0	E1	S1	N0	N0	N0	N0	N0	N0
- bank feature(s)	N0	SC	UB	N0	N0	N0	N0	N0	N0	N0
CHANNEL										
Predominant channel substrate (one entry only)	SP	CP	N0	N1	N1	N0	N0	N0	N0	N1
Predominant flow type (one entry only)	C0	M	R	CF	ST	ST	ST	ST	ST	ST
- channel modification(s)	N0	N0	N0	PS	N0	N0	N0	N0	N0	N0
- channel feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
RIGHT BANK										
Predominant bank material (one entry only)	GA	SA	SP	BC	EP	GT	GH	GA	CA	CA
- bank modification (one entry only)	N0	E1	PS	E1	N0	N0	N0	N0	N0	N0
- bank feature(s)	BC	N0	N0	N0	SC	L0	N0	SC	SC	SC
H- VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.	B = bare	U = uniform	S = simple	C = complex	Refer to spot-check key					
LEFT RIPARIAN ZONE (if none, enter N0)	N0	U	U	N0	N0	U	N0	N0	N0	N0
LEFT BANK	U	S	O	R	U	U	U	U	U	U
RIGHT BANK	U	B	O	B	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter N0)	S	N0	N0	N0	N0	N0	N0	N0	N0	N0
I- CANAL-VEGETATION TYPES (fill in relevant boxes with one entry; use B= 33% area or G= greater than 33%)	NONE (tick as appropriate)									
Emergent macrophytes										
Emergent herbs										
Emergent sedges										
Floating-leaved										
Free-floating										
Ambiphious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or D)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 819 River Name: _____ Mid-section grid reference if different from designated site: _____
 Grid Reference: CP 875 635 E
 Date: 25.5.1994 Start time: 2:45 Surveyor name: ANDREW DAVIES / TONY CARRICK

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 36 + 37

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 36 + 37

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☒

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	CL	CL	CL	CL	CL
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	CL	CL	CL	CL	CL
- bank modification (see entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	SC	N	N	N	N
CHANNEL	CL	CL	GP	CL	GP	CL	CL	CL	ST	ST
Predominant channel substrate (see entry only)	CL	CL	GP	CL	GP	CL	CL	CL	ST	ST
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	PO	AL	AL
- channel modification(s)	N	N	N	N	N	N	N	N	N	N
- channel feature(s)	N	N	N	N	N	N	N	N	N	N
RIGHT BANK	EA	EA	EA	EA	EA	CL	CL	CL	CL	CL
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	CL	CL	CL	CL	CL
- bank modification (see entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter ND)	N	N	N	N	U	N	N	N	N	N
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter ND)	C	S	S	S	S	S	C	C	C	C

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; tick all that apply)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flotilla/deadwood										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use the end column for overall assessment over 500m (see E or F)

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K. OVERVIEW OF LAND USE WITHIN 50m OF RIVER (tick all that apply)

	L	R		L	R
Broadleaf/deciduous woodland			Beg. marsh, etc		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 5 Right bank None ☐ Banklength % = 100

M. BANK PROFILES WITHIN 50m (tick none, box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut			Reinforced		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

N. CHANNELS/FEATURES (tick none, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = _____ Right bank None ☒ Banklength % = _____

O. LIST OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Small-canopied			Fallen trees		
Continuous			Woody debris		

P. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present		None	Present
Number of riffles = 0			Unvegetated mid-channel bars		
Waterfall/cascade			Vegetated mid-channel bars		
Torrential flow (rapids)			Mature island		
Laminar flow (pool/slide)			Unvegetated side bar		
Static flow (back)			Vegetated side bar		
Exposed bedrock			Artificial		
Exposed boulders					

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Q. CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 0.50	Bankfull width (m) 22.0	Bankfull height (m) 0.80
Bank height if different (m) 1.10	Water width (m) 20.0	Bank height if different (m) 1.2
Embanked height (m) -	Water depth (m) 2.2	Embanked height (m) -

R. BED MATERIAL AT SITE

consolidated ☐ chest algal growth compact, stable
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
 unknown ☒ inaccessible or not visible (eg turbid water)

S. LOCATION OF MEASUREMENTS (tick one box)

riffle ☐ run or glide ☒ other ☐ (tick one box)

T. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

U. NUMBER OF ARTIFICIAL FEATURES (use only method, then total; tick none if not applicable)

None ☒ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

V. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

BANKS: None ☒ Riffles ☒ Channel: None ☒
 Re-sectioning ☐ Dredging ☐
 Bank-mapping ☐ Weed-cutting ☐
 Enhancement ☐ Enhancement works ☐ Stone ☐

W. CHOKED CHANNEL

Is 25% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

X. NOTABLE NUISANCE PLANT SPECIES (tick box(es))

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

Y. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Wide, deep, straight channel - heavily vegetated banks. Difficult to access. Substrate covered by pebbles and no tree roots.

Z. SPECIAL FEATURES (eg above, adjacent habitat of high interest, historical significance)

AA. RIVER TYPING (Refer to photographs of river types and indicate which resembles the river)

Number (1-14) ☐ None of them ☐

BB. TIME TAKEN 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
 HELPLINE NUMBERS: PETER FOX 2-21-3149; PAUL RAYEN 2-10-4343; ANDREW BROOKES 2-15-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source (km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 820 River: Kyn/Ti Mid-section grid reference if different from designated site: TLO34687E
Date: 25.5.1994 Start time: 4.45 Surveyor name: Paul Hewitt / Tony Carrick
Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box) 3+4
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 5
Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

G. CHANNEL DIMENSIONS AND INFLUENCES: (to be measured at one site on a straight uniform section, preferably across a time)

LEFT BANK **CHANNEL** **RIGHT BANK**

Bankfull height (m) 1.0 Bankfull width (m) _____ Bankfull height (m) 1.0
Bank height if different (m) 1.3 Water width (m) 2.9 Bank height if different (m) 0.2
Embanked height (m) _____ Water depth (m) _____ Embanked height (m) _____

Bed material at site is: consolidated ☒ clast: algal growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

H. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

I. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then totals. (tick one box, where appropriate)

None ☐ Number of Culverts = C Weirs = I Bridges = 3 Outfalls = I

J. EVIDENCE OF RECENT MANAGEMENT: (tick one box, where appropriate)

BANKS **CHANNEL**

None ☐ None ☒
Resectioning ☐ Dredging ☐
Bank-moving ☐ Weed-cutting ☐
Enhancement ☐ Enhancement works ☐ State _____

K. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

L. NOTABLE NUISANCE PLANT SPECIES: (tick boxes, No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

M. BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of the whole)

Spot checks reflect site - consistently lined with trees running through middle a grassy bank

N. SPECIAL FEATURES: (tick one box, where appropriate)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

O. RIVER TYPING: Refer to photographs of river types and indicate which resembled the river

Number (1-14) ☒ None of them ☐

P. TIME TAKEN: 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5312

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	No	No	No	No	No	No	No	No	No	No
- bank feature(s)	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc
CHANNEL	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	No	No	No	No	No	No	No	No	No	No
- channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	No	No	No	No	No	No	No	No	No	No
- bank feature(s)	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc	Sc

VEGETATION STRUCTURE: (to be assessed over a 10m wide swath). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES: (tick in relevant boxes with one entry only, use B (0-33% cover) or C (33-100% cover))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Ahluide(n) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Platform category
Distance from source(km)

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 221 River: Kyma Mid-section grid reference if different from designated site:
Grid Reference: TL 146 644 E
Date: 25.1.1994 Start time: 145 Surveyor name: Paul McNeill
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: Poor visibility
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☒ Yes ☐ (tick one box)
Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification (trend-natural?) ☐

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (one entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	No	No	No	PO	PO	No	No	No	No	No
CHANNEL:										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	No	No	No	RS	No	No	No
- channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANK:										
Predominant bank material (one entry only)	CL	CL	EA	EA	EA	CL	EA	CL	EA	EA
- bank modification (one entry only)	RS	RS	No	RS	RS	No	No	No	No	No
- bank feature(s)	SC	No	PO	PO	EC	No	No	No	No	PO

II. VEGETATION STRUCTURE: (to be assessed over a 10m wide reach). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE: (if none, enter NO)	U	S	No	No	No	No	No	No	No	No
LEFT BANK:	U	U	U	U	U	U	U	U	U	U
RIGHT BANK:	S	R	U	U	S	S	S	U	U	U
RIGHT RIPARIAN ZONE: (if none, enter NO)	S	S	No	No	No	No	No	S	S	S

III. CHANNEL VEGETATION TYPES: (tick all relevant boxes with one entry; tick S (2-3) area if present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Emergent macrophytes										
Emergent herbs										
Emergent reeds/bushes										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 100m (tick E or I)

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IV. LAND USE WITHIN 50m OF RIVER: (tick one box per feature)

	L	R	L	R
Broadleaf/deciduous woodland				
Coniferous plantation				
Moorland/heath				
Scrub/rough pasture				
Suburban/urban development				

LINEAR EXTENT OF RIPARIAN ZONE: (tick one box; box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 20 Right bank: None ☐ Banklength % = 45

VI. BANK PROFILES WITHIN 50m: (tick one box per feature)

	L	R	L	R
Natural/unmodified				
Vertical/steep				
Vertical + toe				
Steep (>45°)				
Gentle				
Composite				
Artificial/unmodified				
Reinforced				
Reinforced - whole bank				
Reinforced - top only				
Reinforced - toe only				
Artificial re-vegetation				
Poached				

VII. CHANNEL DIMENSIONS: (tick one box per feature)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

VIII. PRESENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

	Left	Right	Left	Right
None				
Isolated/scattered				
Regularly spaced, single				
Occasional clumps				
Stand-continuous				
Continuous				
Shading of channel				
Overhanging boughs				
Exposed bankside roots				
Underwater tree roots				
Fallen trees				
Woody debris				

IX. NATURAL CHANNEL FEATURES: (tick one box per feature)

	None	Present	None	Present
Number of riffles = 1				
Waterfall/cascade				
Torrential flow (rapid)				
Laminar flow (run/slide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				
Unvegetated point bars = 0				
Vegetated point bars = 1				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Isolated island(s)				
Unvegetated side bar				
Vegetated side bar				
Artificial				

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DIMENSIONS AND INFLUENCES:

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

	Channel	Right Bank
Bank full height (m)	1.0	Bank full height (m)
Bank height if different (m)	1.6	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site: consolidated ☐ loose: silt/clay growth compact, stable ☐
unconsolidated ☒ loose: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ inaccessible or not visible (eg. behind water) ☐

Location of measurements: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: (tick one box only)

None ☒ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: Obvious signs: not visible ☐ visible ☐

BANKS:

	L	R	Channel
None			
Reinforcing			
Bank-mowing			
Enhancement			

CHOICE CHANNEL:

Is 33% or more of the channel over 500m checked with vegetation? NO ☒ YES ☐

UNDESIRABLE NUISANCE PLANT SPECIES: (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot check representative of site as a whole)

Left bank channel. Upper 100m channel is a small stream with a rocky bed. The channel is a small stream with a rocky bed. The channel is a small stream with a rocky bed.

SPECIAL FEATURES: (tick one box)

None ☐ Obvious signs: not visible ☐ visible ☐

RIVER TYPING: (tick one box)

Number (1-14) ☐ None of them ☐

THE TAKING OF THIS FORM: (tick one box)

None ☐ Obvious signs: not visible ☐ visible ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYN 7-10-3441; ANDREW BROOKES 7-15-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m: ☐ ENTER SITE NUMBER: ☐ 12

LAND USE WITHIN 500m OF RIVER: Use E (≥ 33% banklength) or F (if present)

Broadleaf/mixed woodland	L	R	Bog, marsh, fen	L	R
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 20

BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or F (if present)

Natural/unmodified	L	R	Artificial/unmodified	L	R
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Postbed		

EMBANKMENTS: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None	Left	Right	E ≥ 33%	None	Present	E
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bank-side roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

ASSOCIATED FEATURES (Tick one box per feature)

NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

Number of riffles	0	Pools	0	Unvegetated Point Bars	0	Vegetated Point Bars	0
Waterfall/cascade		None	Present	Unvegetated mid-channel bars		Vegetated mid-channel bars	
Torrential flow (rapids)				Mature island(s)		Unvegetated side bar	
Laminar flow (run/glide)				Vegetated side bar		Artificial	
Stale flow (slack)							
Exposed bedrock							
Exposed boulders							

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ coarse: algal growth compact, stable
unconsolidated ☐ coarse: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

QUANTITATIVE: Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use only method, then tick 'none' where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT: (Obvious signs tick box(es))

BANKS	L	R	CHANNEL
None			None
Resectioning			Drudging
Bank-moving			Weed-cutting
Enhancement			Enhancement works

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: tick box(es). No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site or a whole)

SPECIAL FEATURES: (eg osprey, adjacent habitat of high interest, historical significance)

RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

TIDE TAKEN: 70 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2149; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Planform category

FIELD SURVEY DETAILS: (complete all questions)

Site number: 822 River Great Ouse Mid-section grid reference if different from Grid Reference: TL 23656E

Date: 25.5.1994 Start time: 8.45 Surveyor name: P. Newman / Tony Carrick

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 33 + 34

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 32

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)

	vee
	concave/bowl
	stepped valley floor (terraced)
	symmetrical
	asymmetrical
	gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

<input type="checkbox"/>	predominantly culverted
<input type="checkbox"/>	open, but bed or banks predominantly artificial (eg box reinforcement)
<input type="checkbox"/>	open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/>	open, but predominantly artificially dug (eg mill leat, dyke)
<input type="checkbox"/>	not artificial, but dammed
<input checked="" type="checkbox"/>	no obvious modification ('semi-natural')

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

<input type="checkbox"/>	torrential/whitewater	<input type="checkbox"/>	riffle-pool	<input type="checkbox"/>	static
<input type="checkbox"/>	step-pool cascade	<input checked="" type="checkbox"/>	approximately laminar	<input type="checkbox"/>	impounded

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TEN SPOT CHECKS (≥ 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀
- bank feature(s)	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀
CHANNEL										
Predominant channel substrate (one entry only)	I ₀	ac	ac	ac	ac	ac	ac	ac	ac	ac
Predominant flow type (one entry only)	AL	FL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀
- channel feature(s)	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter ND)	C	C	C	C	C	C	C	C	C
LEFT BANK	U	U	U	U	U	U	U	U	S
RIGHT BANK	S	S	S	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter ND)	C	C	C	N ₀	N ₀	N ₀	N ₀	N ₀	N ₀

CHANNEL VEGETATION TYPES: (to be assessed over a 10m wide stretch. Fill in each box with one entry only)

NONE (tick as appropriate)										
Overweeds/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or F)

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SWEET-UP OVER 500m ENTER SITE NUMBER 824

LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or U (present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	E	E
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development	E	

K. LINEAR EXTENT OF RIPARIAN ZONE (tick, single box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m (tick E (≥ 33% banklength) or U (present))

Natural/Unmodified	L	R	Artificial/Modified	L	R
Vertical/undercut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)	E	E	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick, single box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

O. NATURAL CHANNEL FEATURES (Record detail number of riffles, pools and point bars)

Number of Riffles = 4	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =		
Tick one box per feature	None Present E	None Present E	None Present E		
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
1.25	6.0	1.25
Bank height if different (m)	Water width (m)	Bank height if different (m)
2.50	3.8	1.95
Embanked height (m)	Water depth (m)	Embanked height (m)
	0.15	

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total. Tick 'none' where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (OPTION: tick tick box)

BANKS	L	R	CHANNEL	
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>
Re-sectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

T. CHOICE CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Almost certainly re-sectioned in past but bank & channel show some signs of reversion to natural form with riffles point bar.

W. SPECIAL FEATURES (if observed, adjacent habitat of high interest, threatened sightings)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN 50 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NAA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. TEL: 01925 531140; FAX: 01925 531141; ANDREW BROOKES 7-35-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Solid geology Distance from source(km)

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 824 River Collection: Mid-section grid reference if different from Grid Reference: T-419056 Lode designated site

Date 14/6/1994 Start time: 14:20 Surveyor name: J. BLACKMAN P. HAVILL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 10m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	FA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank feature(s)	SC	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CL	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide section). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	S	U	C	U	S	S	S	U
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	C	C	C	S	C	C	C	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; tick B (≥ 33% area) or U (present) only)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs	Alisma	Alisma								
Emergent reeds/bushes	Phragmites	Phragmites								
Floating-leaved										
Free-floating										
Amphibious	Utricularia	Utricularia								
Submerged	Elodea	Elodea								
Filamentous algae										

Use end column for overall assessment over 500m (one C or U)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source(km)

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 825 River: Swallow Mid-section grid reference if different from Grid Reference: TL 547646 Grid reference: P. HENNING

Date: 17.6.1994 Start time: 0830 Surveyor name: J. P. HENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☒ approximately laminar ☐ impounded

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G. PHYSICAL ATTRIBUTES: (to be assessed across channel within 1m wide zone)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL:										
Predominant channel substrate (one entry only)	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = single C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE: (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK:	S	S	S	S	S	S	S	S	S	S
RIGHT BANK:	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE: (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry only: E = E. J. C. area or 7. (Grass))

	1	2	3	4	5	6	7	8	9	10
NONE: (tick as appropriate)										
Living ant/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (see E or 7)

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J. LAND USE WITHIN 500m OF RIVER: (tick, none, box or estimate percentage banklength if present)

	L	R		L	R
Broadleaf/woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick, none, box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 100m: (tick, none, box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificially modified		
Vertical/handcut			Retained		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial to slope		
			Poached		

M. EMBANKMENTS: (tick, none, box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

TREES (tick one box per bank)	Left	Right	ASSOCIATED FEATURES (tick one box per feature)	None	Present
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/restricted	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Scrub-semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

O. NATURAL CHANNEL FEATURES: (tick actual number of riffles, pools and point bars)

	None	Present		None	Present
Number of: Riffles =			Unvegetated mid-channel bars		
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Terraced flow (rapid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Station island(s)	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (pool/side)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bankcut	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

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P. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK	
Bank full height (m)	1.85	Bank full height (m)	10.0
Bank height if different (m)		Bank height if different (m)	
Bank width (m)		Bank width (m)	6.0
Bank height if different (m)		Bank height if different (m)	
Bank depth (m)		Bank depth (m)	0.50
Bank height if different (m)		Bank height if different (m)	

Q. CHANNEL CHARACTERISTICS: (tick one box only)

Did material at the site: consolidated ☐ loose ☒ chest: silt growth compact, stable

unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

R. LOCATION OF MEASUREMENTS: (tick one box only)

riffle ☐ run or glide ☒ other ☐ (tick one box)

S. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

T. NUMBER OF ARTIFICIAL FEATURES: (use only method, then total; tick, none, box or estimate percentage banklength if present)

None ☐ Number of: Culverts = Weirs = Bridges = Outfalls =

U. EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

BANKS: None ☒ Resectioning ☐ Dredging ☐ Bank-moving ☐ Weed-cutting ☐ Enhancement ☐ Enhancement works ☐ State ☐

V. CHOSED CHANNEL: (tick one box only)

Is 35% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

W. NOTABLE NUISANCE PLANT SPECIES: (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

X. BRIEF DESCRIPTIVE SENTENCE: (write a brief description of the site as a whole)

Swallow (river) vegetation channel left bank marginal with reeds (Cyperus pennisetum). Banks with reeds grasses - but not a lot of water.

Y. SPECIAL FEATURES: (if above, affect habitat of high interest, historical significance)

Kingfisher eggs

Z. RIVER TYPING: (tick one box only)

Number (1-14) ☐ None of them ☐

AA. TIME TAKEN: 45 min

BB. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FULF, 40 NORTH WEST ROAD, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HR. TEL: 0925 231144; FAX: 0925 231145; E-MAIL: PETER.FULF@WARRINGTON-CC.GOV.UK

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CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.62	Bankfull width (m)	8.0	Bankfull height (m)	1.60
Bank height if different (m)		Water width (m)	4.0	Bank height if different (m)	
Embanked height (m)		Water depth (m)	0.61	Embanked height (m)	

Bed material at site is: consolidated ☐ clay: algal growth compact, stable
unconsolidated ☐ clay: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box only) (use tally method, then total tick "none" where appropriate)

None ☒ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

BANKS	L	R	CHANNEL	S
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	<input type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input checked="" type="checkbox"/>

Is 33% or more of the channel over 500m checked with vegetation? NO ☒ YES ☐

NOTABLE ENDANGERED PLANT SPECIES (tick box(es)) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (concise if short channel representative of site as a whole)

Mostly a shallow over gravel bedded channel with some algal growth. Channel is mostly straight but has some meanders. Channel is mostly straight but has some meanders. Channel is mostly straight but has some meanders.

SPECIAL FEATURES (tick box(es) (use tally method, then total tick "none" where appropriate))

Kurshid (flushed from probable rock pile in bank under overhanging bank)

WATER FLOWING (tick box(es) (use tally method, then total tick "none" where appropriate))

Number (1-14) ☐ None of them ☒

TAKE (tick one box only) 50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-0343; ANDREW BROOKES 7-25-5711

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BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source(km) _____

FIELD SURVEY DETAILS: Complete all questions

Site number: 827 River CAVERNHAM Mid-section grid reference if different from Grid Reference: TL 776655 designated site:

Date: 24/5/1994 Start time: 12.15 Surveyor name: A. R. B. S.

Are conditions affecting survey? No ☐ Yes ☒ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM: (tick one box only)

yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM: (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (a 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	S	C	S	C	S	C	S	C
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (in 33% area) or J (Present))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Upland/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Flamboyant algae										

Use end column for overall assessment over 500m (use E or J)

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SWEEP-UP OVER 500m ENTER SITE NUMBER 827

LAND USE WITHIN 50m OF RIVER (Use E (in 33% banklength) or J if present)

	L	R		L	R
Broadleaf/woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m (Use E (in 33% banklength) or J if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E (in 33%)	None	Present E
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present E
Shading of channel		
Overhanging boughs		
Exposed bank side roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

+ Resectioned cat. web here since ditch has obviously been deepened

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	NN	CC	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO		RI	RI	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO		NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CP	CP	R	SI	SI	CP	CP	SI	SI	SI
Predominant flow type (one entry only)	RE	AL	E	AL	AL	RE	RE	AL	AL	AL
- channel modification(s)	NO	NO		NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	TR	TR		TR	TR	NO	NO	TR	TR	TR
RIGHT BANK										
Predominant bank material (one entry only)	CP	EA	NI	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO		RI	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO		NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	U	C	C	C	C	C	C	C
LEFT BANK	S	U	U	U	S	U	S	S	S	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	U	C	C	C	C	C	C	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (2-33%) and/or E (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

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SWEEP-UP OVER 500m

ENTER SITE NUMBER 32

LAND USE WITHIN 50m OF RIVER: tick E (2-33% banklength) or A (present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilted land		
Scrub/brough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 65 Right bank None ☐ Banklength % = 30

L. BANK PROFILES WITHIN 500m: tick E (2-33% banklength) or A (present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (>45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % = 30

N. EXTENT OF TREES AND ASSOCIATED FEATURES (Tick one box per feature)

	Left	Right	E > 33%	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						
Shading of channel						
Overhanging boughs						
Exposed bankside roots						
Underwater tree roots						
Fallen trees						
Woody debris						

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of: Riffles = 5	Pools = 0	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (back)				
Exposed bedrock				
Exposed boulders				
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Mature island(s)				
Unvegetated side bar				
Vegetated side bar				
Artificial				

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DIMENSIONS AND INFLUENCES

F. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.8	Bank full height (m)
Bank height if different (m)		Bank height if different (m)
Embankment height (m)	1.7	Embankment height (m)

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

G. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

H. NUMBER OF ARTIFICIAL FEATURES. Use tally method, then total: tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

I. EVIDENCE OF RECENT MANAGEMENT. Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

J. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

K. NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

L. BRIEF DESCRIPTIVE SENTENCE (indicates if you check representative of site at a whole)

Aggravated ditch - probably deepened a long time ago. Mostly silted with emergent reed in channel.

M. SPECIAL FEATURES (eg osiers, adjacent habitat of high interest, incidental sightings)

N. RIVER TYPING. Refer to photographs of river types and indicate which resembles the site

Number (1-14) 13 None of them ☐

O. TIME TAKEN 55 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1TB. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-434; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 828 River LARK Mid-section grid reference if different from designated site:

Grid Reference: TL 853655

Date: 24.5.1994 Start time: 15:30 Surveyor name: N. CREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 1.0	Bank full width (m) 7.9	Bank full height (m) 1.0
Bank height if different (m) 1.5	Water width (m) 5.9	Bank height if different (m) -
Embankment height (m) -	Water depth (m) 0.1	Embankment height (m) 4.3

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

PHYSICAL ATTRIBUTES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

RIVER NUMBER OF ARTIFICIAL FEATURES Use tally method, then specify name where appropriate

None ☐ Number of Culverts = 1 Bridges = 0 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (Without signs tick one box)

BANKS	L	R	CHANNEL
Recessional	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-casting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement work <input type="checkbox"/>

CHONED CHANNELS

In 33% or more of the channel over 500m that of with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) or hard to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Rifle pool channel - gravel bed, certain with site. Spot check good. Urban garden along right bank.

SPECIAL FEATURES (tick box(es) or hard to estimate abundance)

Gravel pits running along RHS - Kingfisher seen.

RIVER TYPE (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN 1 hr 45 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYEN 7-16-4343; ANDREW BROOKS 7-25-5313

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION This information is being collected separately

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS Complete all questions

Site number: 829 River SPURTON Mid-section grid reference if different from Grid Reference: TG952654 (x4 = 1000) designated site: TG950656

Date: 24.4.1994 Start time: 16:45 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but recessional and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant channel substrate (see entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; use E (to 33% width) or V (percent))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3

SWEEP UP OVER 500m ENTER SITE NUMBER 829

LAND USE WITHIN 50m OF RIVER Use E (to 33% banklength) or V (percent)

	L	R	L
Broadleaved woodland			
Coniferous plantation			
Moorland/heath			
Scrub/rough pasture			
Bog, marsh, fen			
Improved/semi-improved grass			
Tilled land			
Suburban/urban development			

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m (use E (to 33% banklength) or V (percent))

	L	R	L
Natural/unmodified			
Vertical/undercut			
Vertical + toe			
Slope (> 45°)			
Grass			
Composite			
Artificial/unmodified			
Recessional			
Reinforced - whole bank			
Reinforced - toe only			
Reinforced - toe only			
Artificial toe-stage			
Poached			

BARBANNENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bank side roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	None	Present	None	Present
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (back)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	PO	SC	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	CL	CL	SI	CL	CL	CL	CL	CL
Predominant flow type (one entry only)	N	ST	ST	ST	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	TR	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	CL	NO	NO	NO	NO	NO	NO

II. VEGETATION STRUCTURE (to be assessed over a 10m wide transect) Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	C	S	S	U	U	S	S	NO	NO	NO
LEFT RIPARIAN ZONE (if none, enter NO)										
LEFT BANK	S	B	B	B	B	U	U	U	U	U
RIGHT BANK	S	B	B	B	B	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)										

III. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (to 33% area) or P (present))

NONE (tick as appropriate)

	E	P	E	P	E	P	E	P	E	P
Live reeds/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or P)

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SWEEP-UP OVER 500m: ☐ ENTER SITE NUMBER: 830

LAND USE WITHIN 50m OF RIVER (tick E (to 33% banklength) or P (present))

	L	R		L	R
Broadleaf/mixed woodland	E	E	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land	E	E
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 70 Right bank None ☐ Banklength % = 80

L. BANK PROFILES WITHIN 500m (tick E (to 33% banklength) or P (present))

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut	P	P	Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 30 Right bank None ☐ Banklength % = 30

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	E ≥ 33%	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles = 0	Pools = 0	Unvegetated Point Bars = 0	Vegetated Point Bars = 1
Tick one box per feature				
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.0	Bankfull width (m)	1.3
Bank height if different (m)	—	Water width (m)	0.9
Embankment height (m)	1.6	Water depth (m)	0.5
		Embankment height (m)	1.5

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

	L	R	CHANNEL
None			
Resectioning			
Bank-mowing			
Enhancement			

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☐ Yes ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Outline if spot checks representative of site as a whole)

Agricultural ditch. Spot checks good - although top section incised walled woodland.

W. SPECIAL FEATURES (eg features, adjacent habitats of high interest, incidental sightings)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN 45 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HR. HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 830 River: Gipping Mid-section grid reference if different from designated site: 74 073 620

Date: 5.5.1994 Start time: 11.25 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whilewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

A. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 1.0	Bank full width (m) 1.7	Bank full height (m) 1.0
Bank height if different (m) -	Water width (m) 1.4	Bank height if different (m) -
Embanked height (m) -	Water depth (m) 0.4	Embanked height (m) -

Bed material at site is: consolidated ☒ clast: algal growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

B. TRIBUTARIES (tick one box only)
Significant tributary within 500m length? No ☒ Yes ☐ (if present, tick 'none' where appropriate)

C. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)
None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 3

D. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick one box)
None ☐ L ☐ R ☐ CHANNEL ☒
Re-sedimentation ☐ Dredging ☐
Bank-mowing ☐ Weed-cutting ☐
Enhancement ☐ Enhancement works ☐ Site ☐

E. CHOKED CHANNEL
Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

F. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)
Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

G. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check; representative of site as a whole)
Agricultural ditch - flowing through woodland in middle stretch. Dredged in upper part of survey area.

H. SPECIAL FEATURES (eg arboreal, adjacent habitats of high interest; incidental sightings)

I. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)
Number (1-14) ☐ None of them ☐

J. TIME TAKEN 55 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRLOUGH HOUSE, WARRINGTON, WA4 1HE
HELPLINE NUMBERS: PETER FOX 7-25-2146; PAUL HAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Distance from source (km) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 835 River: Unknown Mid-section grid reference if different from Grid Reference: Sta 352555 - 44-ranon Dashed designated site: 350553
Date: 2.15.1994 Start time: Surveyor name: N. GRIFFIN, J. B. HARRIS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

Very steep vee ☒
Concave/bowl ☐
Stepped valley floor (terraced) ☐
Symmetrical ☐
Asymmetrical ☐
Gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but resedimented and/or realigned ☐
open, but predominantly artificially dug (eg mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)
Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)
torrential/whitewater ☐ Rime pool ☐ static ☐
step-pool cascade ☒ approximately familiar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BE	ES	ES	EC	BE	EC	EA	GP	BE	EC
- bank modification (one entry only)	NO	NO	NO	IX	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	EC	PS	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	BE	ES	GP	CO	GP	CO	GP	GP	GP	GP
Predominant flow type (one entry only)	FO	TV	GP	PE	GP	FO	RE	GP	GP	GP
- channel modification	IX	NO	IX	IX	NO	IX	NO	NO	NO	IX
- channel features	FO	RO	EC	GP	GP	RO	RE	GP	GP	GP
RIGHT BANK										
Predominant bank material (one entry only)	BE	BE	EA	EA	BE	GP	EA	EA	GP	GP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	U	S	B	U	B	U	B	S	S
RIGHT BANK	U	S	S	U	U	S	B	B	C	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (ca 33% area) or J (present) if appropriate)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reedbeds										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SWEET-UP OVER 500m ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER (Use E (ca 33% banklength) or J if present)

	L	R	
Broadleaved/woodland	EE		Bog, marsh, fen
Coniferous plantation			Improved/semi-improved grass
Moorland/heath			Tilled land
Scrub/brough pasture			Suburban/urban development

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % =

L. BANK PROFILES WITHIN 50m (Use E (ca 33% banklength) or J if present)

	L	R	
Natural/unmodified			Artificially modified
Vertical undercut	??		Re-sedimented
Vertical + toe			Reinforced - whole bank
Steep (> 45°)			Reinforced - top only
Grass			Reinforced - toe only
Composite			Artificial toe-edge
			Perched

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	L	R	
None			E > 33%
Isolated/scattered			Shading of channel
Regularly spaced, single			Overhanging boughs
Occasional clumps			Exposed bankside roots
Semi-continuous			Underwater tree roots
Continuous			Fallen trees
			Woody debris

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles > 50	Pools > 50	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (check)				
Exposed bedrock				
Exposed boulders				

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	BE	CP	BC	BE	CP	EA	EA	BC	CP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	SC	SC	NO	PB	SC	VP	SC	SC	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CA	BO	CO	BD	GP	BE	CO	BO	CO	GP
Predominant flow type (one entry only)	RF	PO	AL	CA	AL	RF	RF	RF	RF	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features	NO	RO	NO	RO	NO	NO	RO	RO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CL	BC	BE	EA	EA	BE	EA	BC	EA	BE
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	SC	PB	SC	SC	NO	SC	SC	VP	SC	SC

H VEGETATION STRUCTURE (to be assessed over a 10m wide swath). Fill in each box with one entry only

B = bare U = uniform S = single C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	NO	S	C	C	C	C
LEFT BANK	C	U	B	B	C	S	S	S	B	S
RIGHT BANK	B	B	C	B	C	S	S	S	B	C
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

I CHANNEL VEGETATION TYPES (fill in relative bases with one entry; use E (≥ 33% area) or / (precious))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Live-plant/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

Use end column for overall assessment over 500m (use E or /)

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SWEEP-UP OVER 500m ENTER SITE NUMBER

J LAND USE WITHIN 50m OF RIVER (tick E (≥ 33% banklength) or / if present)

	L	R		L	R
Broadleaved woodland	E	E	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 80 Right bank: None ☐ Banklength % = 100

L BANK PROFILES WITHIN 500m. Use E (≥ 33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial no-slope		
			Peached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E ≥ 33%	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present	E
Number of riffles			
Number of pools			
Number of point bars			

Unvegetated Point Bars = 11 Vegetated Point Bars = 11

Number of riffles = 14 Number of pools = 5 Number of point bars = 11

Waterfall/cascade ☐ Torment flow (rapids) ☐ Laminar flow (run/glide) ☐ Static flow (stuck) ☐ Exposed log/junk ☐ Exposed boulders ☐ Artificial ☐

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DIMENSIONS AND INFLUENCES

P CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.25	Bankfull width (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ unconsolidated ☒ unknown ☐ clues: algal growth compact, stable; fresh clean gravel, easily dislodged, loose; inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick boxes)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-moving			Weed-cutting
Enhancement			Enhancement works

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick boxes) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Outline if spot checks representative of site as a whole)

Step-pool cascade sequence - with single pool sequence also present near rising water. Site is steep overgrown valley.

W SPECIAL FEATURES (eg oxbows, adjacent habitats of high interest, accidental spillages)

X RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

Y TIME TAKEN: 2 hrs (10:30-12:30)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 14A NORTH WEST REGION, RICHARD FAIRLOUGH HOUSE, WARRINGTON, CHA1 1JH. TELEPHONE NUMBERS: PETER FOX 01243 214141; PAUL KAYEN 01243 214142; ANDREW BROOKS 01243 214143.

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A BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Solid geology Distance from source (km) Platform category

B FIELD SURVEY DETAILS (Complete all questions)

Site number: 836 River MYBYR Mid-section grid reference if different from designated site: SN 478 585

Date 19.11.1994 Start time: 15.45 Surveyor name: J. A. BLACKBURN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C PREDOMINANT VALLEY FORM (tick one box only)

vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

D PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

run-riffle ☐ step-pool cascade ☐ riffle-pool ☒ static ☐ approximately laminar ☐ impounded ☐

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RIVER HABITAT SURVEY: 1994 VERIFICATION

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A

BACKGROUND INFORMATION

This information is being collected separately

Altitude(m)

Slope

Mean Annual Flow category (1-10)

Solid geology

Drift geology

Planform category

Distance from source(km)

B

FIELD SURVEY DETAILS

Complete all questions

Site number: 837

River Afon Aeron

Mid-section grid reference if different from designated site:

Grid Reference: SN 555 562

Date 12.1.5.1994

Start time: 11.00

Surveyor name: J. BLACKBURN

Are conditions affecting survey?

No ☒

Yes ☐

If yes, state

Bed of river visible?

No ☐

partially ☐

entirely ☒

(tick one box)

Photograph: general character?

No ☐

Yes ☒

(tick one box)

Photograph of channel measurement site?

No ☐

Yes ☒

(tick one box)

Site surveyed from:

left bank ☒

right bank ☐

both banks ☐

channel ☐

C

PREDOMINANT VALLEY FORM

(tick one box only)

☐ vee

☒ concave/bowl

☐ stepped valley floor (terraced)

☐ symmetrical

☐ asymmetrical

☐ gorge

D

PREDOMINANT CHANNEL FORM

(tick one box only)

☐ predominantly culverted

☐ open, but bed or banks predominantly artificial (eg box reinforced)

☐ open, little or no obvious reinforcement, but resectioned and/or realigned

☐ open, but predominantly artificially dug (eg. mill leat, dyke)

☐ not artificial, but dammed

☒ no obvious modification ('semi-natural')

E

NAVIGATION

(tick one box only)

Is there a functioning navigation?

No ☒

Yes ☐

Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ turbulent / high speed

☐ turbulent / low speed

☒ transitional

☐ laminar

☐ step pool cascade

☐ approximately laminar

☐ impounded

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RIVER HABITAT SURVEY: 1994 VERIFICATION

SITE #: RIVERMUP OVER 500m

ENTER SITE NUMBER 2

LAND USE WITHIN FAN OF RIVER (in 25% beatlength) or if Upriver

	L	R	
Broadleaf/mixed = croc/land		E	Deg. marsh, 6%
Coniferous plantation			Ingron d/band-improvd grass
Moorland/heath			Tilled land
Scrub/rough pasture			- Suburban urban development

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage beatlength if present)

Left bank None ☐ Beatlength % = 15 Right bank None ☐ Beatlength % = 10

L BANK PROFILES WITHIN 500m (in E & W 25% beatlength) or if Upriver

Natural/unmodified	L	R	Artificial/modifed
Vertical/wadest	??	EE	Rivenclosed
Vertical + toe	?		Reinforced - whole bank
Slope (> 45°)	?	✓	Reinforced - top only
Gravel	?		Reinforced - toe only
Concrete	✓	✓	Artificial to estuary
			Pierhead

M ENBANKMENTS (tick "none" box or estimate percentage beatlength if present)

Left bank None ☐ Beatlength % = Right bank None ☐ Beatlength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per band)

	Left	Right	E & W	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>				
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>				
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>				
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>				
Semi-continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Continuous	<input type="checkbox"/>	<input type="checkbox"/>				

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present	E
Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Under-size tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

O NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None	None	None	None
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Terraced flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lamellar flow (pool/slides)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bank flow (slide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetated mid-channel bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetated end-channel bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shoreline islands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	SC	SC	SC	SC	SC	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide swath). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	C	U	S	S	S	S	S	S	S
RIGHT BANK	U	S	S	B	S	S	S	S	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in different boxes with one entry; site E (ca 33% area) or (if present))

NONE (tick all appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use one column for overall assessment (at 500m) (tick one box)

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SWEEP-UP OVER 500m

ENTER SITE NUMBER 838

J. LAND USE WITHIN 50m OF RIVER (tick one box per 33% banklength) or (if present)

	L	R		L	R
Broadleaf/deciduous woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

L. BANK PROFILES WITHIN 500m: (tick one box per 33% banklength) or (if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut			Recessed		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Pushed		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E (ca 33%)	None	Present
None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Riffles	0			
Pools	0			
Point bars	0			

Tick one box per feature

	None	Present
Waterfall/cascade		
Torrential flow (rapids)		
Laminar flow (run/glide)		
Stable flow (slack)		
Unvegetated mid-channel bars		
Vegetated mid-channel bars		
Major islands		
Unvegetated side bar		
Vegetated side bar		
Artificial		

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DIMENSIONS AND INFLUENCES

F. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	2.5	Bankfull width (m)
Bank height if different (m)		Water width (m)
Embanked height (m)		Bank height if different (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

G. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

H. NUMBER OF ARTIFICIAL FEATURES: Use only numbers, then total; tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

I. EVIDENCE OF RECENT MANAGEMENT: Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None			None
Recessing			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

J. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

K. NOTABLE NUISANCE PLANT SPECIES (tick box(es) in order to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

L. BRIEF DESCRIPTIVE SENTENCE: Indicate if spot check representative of all of a whole

Some meadowland and grassland on left bank (about 100m) right bank stabilized by tree roots, some algal growth (about 100m) right bank

M. SPECIAL FEATURES: or other important features of high interest, unusual alignment

Kingfisher perched on left bank

N. RIVER TYPING: Refer to photographs of river type and indicate which resembles the site

Number (1-10) ☒ None of them ☐

O. TIME TAKEN: 1.5

P. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY AND SIGNED: THEN RETURN TO: PETER FOX, 10 NORTH WEST REGION, RICHARD FAIRLOUGH HOUSE, WARRINGTON, WA1 4JH. TELEPHONE NUMBERS: PETER FOX 721-2146, PAUL BRAYNE 721-4141, ANDREW BROOKS 721-5171

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A. BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Planform category

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 838 River: JB (F) Mid-section grid reference if different from designated site: S3 640555

Date: 21/5/1994 Start time: Surveyor name: N. ARRIEVE & J. BLACKBURN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

	valley
	concave/bowl
	stepped valley floor (terraced)
	symmetrical
	asymmetrical
	gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)







	predominantly culverted
	open, but bed or banks predominantly artificial (eg box reinforced)
	open, little or no obvious reinforcement, but recessed and/or realigned
	open, but predominantly artificially dug (eg. mill leat, dyke)
	not artificial, but dammed
	no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

	laminar
	turbulent
	approximately laminar
	impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION			
A. BACKGROUND INFORMATION <i>This information is being collected separately.</i>			
Altitude(m) Solid geology Distance from source(km)	Skye Drift geology	Mean Annual Flow category (1-10) Planform category	
B. FIELD SURVEY DETAILS <i>Complete all questions</i>			
Site number: 839 Grid Reference: SN 775 554		River Camlow Mid-section grid reference if different from designated site:	
Date 11.1.5.1994 Start time: 0850		Surveyor name N. GRIFFIN	
Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, state _____			
Bed of river visible? No <input type="checkbox"/> partially <input type="checkbox"/> entirely <input checked="" type="checkbox"/> (tick one box)			
Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box)			
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box)			
Site surveyed from: left bank <input type="checkbox"/> right bank <input type="checkbox"/> both banks <input checked="" type="checkbox"/> channel <input type="checkbox"/>			
C. PREDOMINANT VALLEY FORM <i>(tick one box only)</i>		D. PREDOMINANT CHANNEL FORM <i>(tick one box only)</i>	
 <input checked="" type="checkbox"/> vee  <input type="checkbox"/> concave/bowl  <input type="checkbox"/> stepped valley floor (terraced)  <input type="checkbox"/> symmetrical  <input type="checkbox"/> asymmetrical  <input type="checkbox"/> gorge		<ul style="list-style-type: none"> <input type="checkbox"/> predominantly culverted <input type="checkbox"/> open, but bed or banks predominantly artificial (eg bar reinforced) <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input checked="" type="checkbox"/> no obvious modification ('semi-natural') 	
E. NAVIGATION <i>(tick one box only)</i>			
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>			
F. PREDOMINANT FLOW TYPE <i>(tick one box only)</i>			
torrential/slow water <input type="checkbox"/> riffle/pool <input checked="" type="checkbox"/> static <input type="checkbox"/> step-pool/cascade <input type="checkbox"/> approximately laminar <input type="checkbox"/> impounded <input type="checkbox"/>			

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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	1.0	Bankfull width (m)	15.50	Bankfull height (m)	1.10
Bank height if different (m)	—	Water width (m)	9.15	Bank height if different (m)	—
Embanked height (m)	—	Water depth (m)	0.25	Embanked height (m)	—

Bed material at site is: consolidated ☐ clastic: silt/clay growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> State <input type="checkbox"/>

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

INACTIVE LOWLAND RIVER WITH HOUSING ON LEFT BANK AND FENCE ON LEFT

SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, residential adjoining)

RIVER TYING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 13 None of them ☐

TIME TAKEN 80 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5713

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 25 River: 106 Mid-section grid reference if different from designated site:
Grid Reference: Date: 21/1/1994 Start time: 12.15 Surveyor name: Ian Smith / Gill
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: (15)
Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box) 33
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 84
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

vec ☐
concave/bowl ☐
stepped valley floor (terraced) ☐
symmetrical ☐
asymmetrical ☐
gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☒
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SP	GR	BR	GA	GH	EN	SP	SP	GA	GR
- bank modification (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	SC	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	NU	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	10	10	10	10	10	10	10	10	10	10
- channel feature(s)	10	10	10	10	10	10	10	10	10	10
RIGHT BANK										
Predominant bank material (one entry only)	SP	GR	CC	CC	SP	GA	GA	GA	GA	GA
- bank modification (one entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	S	B	U	U	U	U	U	U	U
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% bare) or C (present))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filementous algae										

Use end column for overall assessment over 500m (use E or A)

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ENTER SITE NUMBER 86

LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or A (if present))

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Suburban/urban development			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 60

BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or A (if present))

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Reassembled		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

RAILBANKS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)		ASSOCIATED FEATURES (tick one box per feature)	
None	<input checked="" type="checkbox"/>	E ≥ 33%	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>
Scattered continuous	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
		Woody debris	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles = Pools = Unvegetated Point Bars = Vegetated Point Bars =	None	Present	None	Present
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stale flow (black)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embarked height (m)	Water depth (m)	Embarked height (m)

Bed material at site is: consolidated ☐ close: algal growth compact, stable
 unconsolidated ☐ close: fresh clean gravel, easily dislodged, loose
 unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use only method, then tick box, none where appropriate

None	Number of	Culverts	Wells	Bridges	Outfalls

EVIDENCE OF RECENT MANAGEMENT (Without signs tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es), No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Large, inactive, meandering, winding river, heavily punched left bank

SPECIAL FEATURES (eg obvious, adjacent habitats of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the river)

Number (1-14) ☒ None of them ☐

TIME TAKEN 70 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKS 7-25-5712

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A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 801 River Great Ouse Mid-section grid reference if different from designated site: SP943 557E

Date 26/5/1994 Start time: 9:15 Surveyor name: P. H. Fox / T. B. GARRICK

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☒ (tick one box)

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/white water ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	fine CL									
- bank modification (one entry only)	No	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉
- bank feature(s)	No	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉
CHANNEL										
Predominant channel substrate (one entry only)	fine SL	GP	SL	GP	SL	GP	SL	GP	SL	GP
Predominant flow type (one entry only)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
- channel modification(s)	No	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉
- channel feature(s)	No	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉
RIGHT BANK										
Predominant bank material (one entry only)	fine CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
- bank modification (one entry only)	No	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉
- bank feature(s)	No	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉

H. VEGETATION STRUCTURE (to be assessed over a 10m wide channel: fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: B (is 33% area) or C (present))

NONE (tick or appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent root/hedge										
Floting-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SWEEP-UP OVER 500m

LAND USE WITHIN 50m OF RIVER (Use E (is 33% banklength) or J (if present))

	L	R
Broadleaved woodland		
Coniferous plantation		
Moorland/heath		
Scrub/heath pasture		
Bog, marsh, fen		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (Use E (is 33% banklength) or J (if present))

	L	R
Natural/unmodified		
Vertical undercut		
Vertical + toe		
Step (> 45°)		
Gullies		
Composite		
Artificial/modified		
Resectioned		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

EMBANKMENTS (tick none, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of	Pools	Unvegetated Point Bars	Vegetated Point Bars
Riffles	0	0	0	0
Waterfall/cascade	0	0	0	0
Torrential flow (rapid)	0	0	0	0
Laminar flow (run/glide)	0	0	0	0
Static flow (slack)	0	0	0	0
Exposed bedrock	0	0	0	0
Exposed boulders	0	0	0	0
Unvegetated mid-channel bars	0	0	0	0
Vegetated mid-channel bars	0	0	0	0
Mature island(s)	0	0	0	0
Unvegetated side bar	0	0	0	0
Vegetated side bar	0	0	0	0
Artificial	0	0	0	0

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANKS										
Predominant bank material (one entry only)	BR	EA	EA	EA	EA	CL	EA	EA	EA	EA
- bank modification (one entry only)	RI	No	No	No	No	No	No	No	No	No
- bank feature(s)	No	EC	No	EC	No	No	No	No	No	No
CHANNEL										
Predominant channel substrate (one entry only)	RR	CL	GP	CL	CL	CL	GP	CL	GP	CL
Predominant flow type (one entry only)	AL	AL	EL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	No	No	No	No	No	No	No	No	No	No
- channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANKS										
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RI	No	No	No	No	No	No	No	No	No
- bank feature(s)	No	No	No	No	No	No	No	No	No	No
H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	No	U	No	U	S	U	S	No	No
LEFT BANK	B	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	U	S	S	U	S	U	S	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	S	U	U	U	U	S	U	U
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or V (green))										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

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SWEEP UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or V (green)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 70 Right bank None ☐ Banklength % = 1

L. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or V (green)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
• Vertical/undercut			• Resectioned		
• Vertical + toe			• Reinforced - whole bank		
• Steep (> 45°)			• Reinforced - top only		
• Gentle			• Reinforced - toe only		
• Composite			• Artificial two-stage		
			• Pushed		

M. EXPOSURES (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None			E ≥ 33%			
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bankside roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

O. NATURAL CHANNEL FEATURES (Record visual number of riffles, pools and point bars)

	Number of: Riffles = 0	Pools = 2	Unvegetated Point Bars = 0	Vegetated Point Bars = 1
Tick one box per feature	None	Present	None	Present
Waterfall/cascade			Unvegetated mid-channel bars	
Torrential flow (rapids)			Vegetated mid-channel bars	
Laminar flow (run/glide)			Mature island(s)	
Static flow (slack)			Unvegetated side bar	
Exposed bedrock			Vegetated side bar	
Exposed boulders			Artificial	

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.5	Bank full width (m)
Bank height if different (m)	0.9	Bank full height (m)
Embanked height (m)		Bank height if different (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick 'none' where appropriate)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick one box)

BANKS	L	R	CHANNEL
None			None
Rejectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NOISANCE PLANT SPECIES (tick boxes: No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Site description: ...

W. SPECIAL FEATURES (eg obvious, different habitats of high interest, incidental sightings)

Hydro - very deep water

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒ Image 6

Y. TIME TAKEN: 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 0121-2140; PAUL RAVEN 0161-4343; ANDREW BROOKES 0125-5112

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change site point

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Solid geology Planform category Distance from source(km)

C. FIELD SURVEY DETAILS (Complete all questions)

Site number: 962 River bank and Mid-section grid reference if different from designated site: TLO17554

Date: 27.1.1994 Start time: 11.00 Surveyor name: Paul Bennett / Toby Carr

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

D. PREDOMINANT VALLEY FORM (tick one box only)

	v-shaped	
	concave/bowl	
	stepped valley floor (terraced)	
	symmetrical	
	asymmetrical	
	gorge	

E. PREDOMINANT CHANNEL FORM (tick one box only)

	predominantly culverted	
	open, but bed or banks predominantly artificial (eg box reinforced)	
	open, little or no obvious reinforcement, but resectioned and/or realigned	
	open, but predominantly artificially dug (eg. mill leat, dyke)	
	not artificial, but dammed	
	no obvious modification ('semi-natural')	

F. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

G. PREDOMINANT FLOW TYPE (tick one box only)

	torrential/whitewater	
	step-pool cascade	
	riffle-pool	
	approximately laminar	
	stale	
	impounded	

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 1.5	Bank full width (m) 33.0	Bank full height (m) 1.5
Bank height if different (m) 1.5	Water width (m) 15.0	Bank height if different (m) 2.8
Embanked height (m) N/A	Water depth (m) >2.0	Embanked height (m) 1.0

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

OR TRIBUTARIES (tick one box only)
Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)
None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 0 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/>

T. CHOTON CHANNEL
Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)
Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
A small, fast flowing, slightly sinuous, 1.5PS of low flow, no 2 banks. Bed covered by pebbles - clay with some gravel in places.

W. SPECIAL FEATURES (eg obvious, adjacent habitats of high interest, incidental findings)
Fire history sampled after interaction with debris, little vegetation damage, trees and channels into lakes.

X. RIVER TYPE (Refer to photographs of river types and indicate which resembles the river)
Number (1-14) ☐ None of them ☒

Y. TIME TAKEN 70 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m)	Slope	Mean Annual Flow category (1-10)
Solid geology	Drift geology	Planform category
Distance from source (km)		

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: B67 River GREAT OUSE Mid-section grid reference if different from designated site: T L 12 S 32

Date: 21.5.1994 Start time: 4.35 pm Surveyor name: P. J. HERRICK / TOBY CARRICK

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

	<input type="checkbox"/> vee
	<input type="checkbox"/> concave/bowl
	<input type="checkbox"/> stepped valley floor (terraced)
	<input checked="" type="checkbox"/> symmetrical
	<input type="checkbox"/> asymmetrical
	<input type="checkbox"/> gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

<input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed
<input checked="" type="checkbox"/> no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)
Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

<input type="checkbox"/> torrential/whitewater	<input type="checkbox"/> riffle-pool	<input type="checkbox"/> static
<input type="checkbox"/> step-pool cascade	<input checked="" type="checkbox"/> approximately laminar	<input type="checkbox"/> impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 20m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	SA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
- bank feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
CHANNEL										
Predominant channel substrate (one entry only)	CP	CP	CP	CP	CP	CP	CP	CP	CP	CP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
- channel feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
- bank feature(s)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only:
B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	S	S	U	S	U	S	U	S
RIGHT BANK	S	S	U	S	U	S	U	S	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	U	U	C	U	U	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use 0 (0-33% area) or 1 (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or 1)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER 26

LAND USE WITHIN 50m OF RIVER (Use E (ca 33% banklength) or 1 (if present))

	L	R
Broadleaf/deciduous woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Bog, marsh, fen		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)
Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m (Use E (ca 33% banklength) or 1 (if present))

	L	R
Natural/Unmodified		
Vertical/undercut	<input checked="" type="checkbox"/>	
Vertical + toe		
Slope (> 45°)		
Gentle		
Composite		
Artificial/Modified		
Revetting		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)
Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots
Semi-continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fallen trees
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of: Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (50m apart)

Spot check 1 is ☒ upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	FA	FA	LA	CL	CL	CL	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	CC	CC	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	SA	SA	SA	SA	ST	GP	GP	GP	SA
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	ST	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CL	CL	CL	EA	EA	CL	EA	CL	CL	CL
- bank modification (one entry only)	RS	RS	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	NO	NO	SC	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide zone). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	C	S
LEFT BANK	B	U	B	U
RIGHT BANK	U	S	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	S	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use B (2-11% area) or U (12-100% area))

	None	Emergent herbs	Emergent reeds/sedges	Floating-leaved	Free-floating	Amphibious	Submerged	Filamentous algae
None (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent herbs		<input checked="" type="checkbox"/>						
Emergent reeds/sedges			<input checked="" type="checkbox"/>					
Floating-leaved				<input checked="" type="checkbox"/>				
Free-floating					<input checked="" type="checkbox"/>			
Amphibious						<input checked="" type="checkbox"/>		
Submerged							<input checked="" type="checkbox"/>	
Filamentous algae								<input checked="" type="checkbox"/>

Use end column for overall assessment over 500m (use E or U)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SITE-UP OVER 500m

LAND USE WITHIN 50m OF RIVER (tick one box)

	L	R
Broadleaf/deciduous woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE: (tick one box)

Left bank None ☒ Banklength S = 100 Right bank None ☒ Banklength S = 100

RANK PROFILES WITHIN 500m: (tick one box)

	L	R
Natural/unmodified		
Vertical/unmodified		
Vertical - too steep (> 45°)		
Gentle		
Composite		
Artificial/unmodified		
Revetted		
Revetted - whole bank		
Revetted - top only		
Revetted - toe only		
Artificial revetments		
Revetted		

EMBANKMENTS: (tick one box)

Left bank None ☒ Banklength S = 100 Right bank None ☒ Banklength S = 100

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	None	Left	Right
None	<input checked="" type="checkbox"/>		
Isolated/scattered		<input checked="" type="checkbox"/>	
Regularly spaced, single			<input checked="" type="checkbox"/>
Occasional clumps			
Semi-continuous			
Continuous			

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		<input checked="" type="checkbox"/>
Overhanging branches		<input checked="" type="checkbox"/>
Exposed bankside roots		<input checked="" type="checkbox"/>
Underwater tree roots		<input checked="" type="checkbox"/>
Fallen trees		<input checked="" type="checkbox"/>
Woody debris		<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present
Number of riffles = 2		<input checked="" type="checkbox"/>
Waterfalls/cascades		<input checked="" type="checkbox"/>
Vertical flow (rapid)		<input checked="" type="checkbox"/>
Laminar flow (run/slide)		<input checked="" type="checkbox"/>
Static flow (slack)		<input checked="" type="checkbox"/>
Exposed bedrock		<input checked="" type="checkbox"/>
Exposed boulders		<input checked="" type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.7	Bankfull width (m)	3.0
Bank height if different (m)	0.7	Water width (m)	3.2
Embankment height (m)		Water depth (m)	2.0

Bed material at site is: ☒ consolidated ☐ close: silt/clay growth compact, stable ☐ loose: fresh clean gravel, easily dislodged, loose ☐ inaccessible or not visible (eg. turbid water)

Location of measurements is: ☐ riffle ☒ run or glide ☐ other (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☒ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT (tick one box only)

	BANKS	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>

T. CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (tick one box only)

W. SPECIAL FEATURES (tick one box only)

X. RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN (tick one box only)

60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, VIA THE HELPLINE NUMBERS: PETER FOX 7-21-3146; PAUL RAVEN 7-18-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) ☐ Slope ☐ Mean Annual Flow category (1-10) ☐
 Geology ☐ Drift geology ☐ Platform category ☐
 Distance from source (km) ☐

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 864 River: T. of L. Mid-section grid reference if different from designated site: TL245523

Date: 26.1.1994 Start time: 1:45 Surveyor name: PAV. DAVENPORT / J. G. G. G.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

<input type="checkbox"/> vee	<input type="checkbox"/> predominantly culverted
<input type="checkbox"/> concave/bowl	<input type="checkbox"/> open, but bed or banks predominantly artificial (eg. box reinforced)
<input type="checkbox"/> stepped valley floor (terraced)	<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input checked="" type="checkbox"/> symmetrical	<input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke)
<input type="checkbox"/> asymmetrical	<input type="checkbox"/> not artificial, but dammed
<input type="checkbox"/> gorge	<input checked="" type="checkbox"/> no obvious modification ('semi-natural')

D. PREDOMINANT CHANNEL FORM (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

E. PREDOMINANT FLOW TYPE (tick one box only)

<input type="checkbox"/> torrential/whirlwater	<input type="checkbox"/> riffle-pool
<input type="checkbox"/> step-pool cascade	<input checked="" type="checkbox"/> approximately laminar
	<input type="checkbox"/> static
	<input type="checkbox"/> impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.5	Bank full width (m) 3.5	Bank full height (m) 0.5
Bank height if different (m) 1.2	Water width (m) 1.8	Bank height if different (m) 0.6
Embanked height (m)	Water depth (m) 0.15	Embanked height (m)

Bed material at site is: consolidated ☒ clast: silt/clay growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg. turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)
Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate
None ☐ Number of Culverts = 0 Weirs = 2 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)
BANKS: L R CHANNEL: None ☒
Resectioning ☐ Dredging ☐
Bank-mowing ☐ Weed-cutting ☐
Enhancement ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL
Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance
Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site or a whole)
Spot check site. Seemed to be original purpose - small weir
on dug out in the past but existing with time.

SPECIAL FEATURES (eg. exposure, adjacent habitats of high interest, incidental sightings)

RIVER TYPING Refer to photographs of river types and indicate which resembles the site
Number (1-14) ☐ None of them ☒

TIME TAKEN 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5312

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3

BACKGROUND INFORMATION This information is being collected separately.




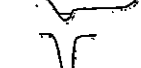


Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source (km)

FIELD SURVEY DETAILS Complete all questions
Site number: 965 River: River Broom Mid-section grid reference if different from designated site:
Grid Reference: TL 361 555
Date: 2.1.5/1994 Start time: 10.40 Surveyor name: Paul Henville / Tony Carr
Are conditions affecting survey? No ☒ Yes ☐ If yes, state ☐

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 2.4 + 2.5
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 2.2

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)
 ☐ vee
 ☐ concave/bowl
 ☐ stepped valley floor (terraced)
 ☒ symmetrical
 ☐ asymmetrical
 ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)
• predominantly culverted ☐
• open, but bed or banks predominantly artificial (eg. box reinforced) ☐
• open, little or no obvious reinforcement, but resectioned and/or realigned ☐
• open, but predominantly artificially dug (eg. mill leat, dyke) ☐
• not artificial, but dammed ☐
• no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)
Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)
torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 10m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	No	No	No	No	No	No	No	No	No	No
- bank feature(s)	No	No	SC	No	SC	No	No	No	No	SC
CHANNEL										
Predominant channel substrate (one entry only)	GP	CL	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	RF	GF	AL	AL	AL	FL	AL	AL
- channel modification(s)	No	No	No	No	No	RS	No	No	No	No
- channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANK										
Predominant bank material (one entry only)	EA	GP	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	No	No	No	No	No	No	No	No	No	No
- bank feature(s)	EC	SC	VS	SC	SC	No	EL	PB	No	No

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only
B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	No	No	No	No	No	No	No	No	No	C
LEFT BANK	U	U	U	U	U	U	U	U	U	B
RIGHT BANK	U	B	U	U	U	U	U	B	B	U
RIGHT RIPARIAN ZONE (if none, enter NO)	No	No	No	No	No	No	No	No	No	U

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (ca 33% area) or J (present))
NONE (tick as appropriate)
Liverworts/mosses ☐
Emergent herbs ☐
Emergent reeds/sedges ☒
Floating-leaved ☒
Free-floating ☐
Amphibious ☐
Submerged ☐
Filamentous algae ☐

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

SWEEP-UP OVER 500m

LAND USE WITHIN 50m OF RIVER Use E (ca 33% banklength) or J (if present)
ENTER SITE NUMBER 12

	L	R		L
Broadleaf/mixed woodland	<input checked="" type="checkbox"/>		Reg. marsh, fen	
Coniferous plantation			Improved/semi-improved grass	E
Moorland/heath			Tilled land	
Scrub/brough pasture			Suburban/urban development	

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)
Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % = 10

BANK PROFILES WITHIN 500m Use E (ca 33% banklength) or J (if present)

	L	R		L
Natural/unmodified	<input checked="" type="checkbox"/>		Artificial/unmodified	
• Vertical/undercut	<input checked="" type="checkbox"/>		• Resectioned	
• Vertical + toe	<input checked="" type="checkbox"/>		• Reinforced - whole bank	
• Steep (>45°)	<input checked="" type="checkbox"/>		• Reinforced - top only	
• Gentle			• Reinforced - toe only	
• Composite			• Artificial two-stage	
			• Poached	

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)
Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	E > 33%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Overhanging boughs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Scrub/continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles = 7	Pools = 3	Unvegetated Point Bars = 1	Vegetated Point Bars = 1
Tick one box per feature				
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/slide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto II and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CA	CA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NB	NB	NB	PC	NB	NB	NB	NB	NB	NB
- bank features(s)	NB	NA	SC	PO	NB	NB	SC	NB	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- channel features(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- bank features(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

II. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NB)	NB	U	U	S	S	U	NB	NB	U	U
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	U	U	U	S	S	S	U	U
RIGHT RIPARIAN ZONE (if none, enter NB)	S	S	S	S	S	S	S	S	S	S

III. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E = 1% area or less U = 1% area or less)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Upriver/mosses										
Emergent herbs										
Emergent rush/sedges										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 100m (use E or U)

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RIVER UP OVER 100m

ENTER SITE NUMBER

LAND USE WITHIN 100m OF RIVER (use E, S, U, or P for percentage of banklength (if present))

	L	R		L
Broadleaved woodland			Bag, marsh, fen	
Coniferous plantation			Improved/improved grass	
Moorland/heath			Tilled land	
Scrub/rough pasture			Suburban/urban development	

LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % = 10

IV. BANK PROFILES WITHIN 100m (use E, S, U, or P for percentage of banklength (if present))

	L	R		L
Natural/Unmodified			Artificial/modified	
Vertical/handcut			Reinforced	
Vertical + toe			Reinforced - whole bank	
Steep (> 45°)			Reinforced - top only	
Grass			Reinforced - toe only	
Composite		Artificial revetments		
			Revetment	

VI. CHANNEL VEGETATION TYPES (tick one box per feature)

	Left	Right	E > 1%	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Small continuous						
Continuous						

VI. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools, and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature				
Waterfall/cascade				
Terraced flow (rapid)				
Laminar flow (rapid)				
Suik flow (slow)				
Exposed bedrock				
Exposed boulders				

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V. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.20	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	1.35	Water width (m)	Bank height if different (m)
Embankment height (m)	NB	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☐ close: algal growth, compact, stable
unconsolidated ☒ close: fresh clean gravel, easily dislodged, loose
unstable ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

VI. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

VII. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total: tick none where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

VIII. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick one)

	L	R	CHANNEL
None			
Resectioning			
Bank-moving			
Enhancement			

IX. CHANNEL CHARACTERISTICS

Is 33% or more of the channel over 500m channel width vegetation? NO ☒ YES ☐

X. NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

XI. BRIEF DESCRIPTIVE SENTENCE (use only if the channel is representative of the site)

The channel is a small, fast-flowing, straight section with some minor resectioning.

XII. SPECIAL FEATURES (tick one box only)

XIII. RIVER TYPING (tick one box only)

Number (1-14) ☐ Name of river ☒

XIV. TIME TAKEN (tick one box only)

60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NWA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAVEN 7-18-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 5 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)

Solid geology Drift geology Platform category

Distance from source (km)

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 866 River CAM Mid-section grid reference if different from designated site:

Grid Reference: TL 435 557

Date: 29/4/1994 Start time: 1810 Surveyor name: A. BAKER

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification (semi-natural) ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Partly ☐ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ else: algal growth compact, stable
 unconsolidated ☐ else: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick 'none' where appropriate)

Noise ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious signs not lost)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None <input checked="" type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-casting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Enhancement works <input type="checkbox"/> State <input checked="" type="checkbox"/>

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

UNUSUAL NOTABLE NUISANCE PLANT SPECIES (tick boxes; No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

Deep channel, flow with gentle meanders, no riparian zone for most of left bank, channel starts to bank up

SPECIAL FEATURES (e.g. obstructions, adjacent habitats of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

TIME TAKEN 40 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 7HE. HELPLINE NUMBERS: PETER FOX 7-21-1140; PAUL RAY 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 867 River GRANTA Mid-section grid reference if different from Grid Reference: TL 503 511 GRANTA designated site:

Date 15/6/1994 Start time: 0935 Surveyor name: J. BLACKBURN, P. HENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (e.g. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29/04/94 13:56 00151 624033

NRA Water Nugent

0003

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide area)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	SC	NO	NO	SC	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide reach): Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	S	S	S	S	S	C	C	C
LEFT BANK	S	S	S	C	U	S	S	U	S	S
RIGHT BANK	S	U	S	S	S	S	U	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	S	NO	C	C

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; use B for 33% area of riparian zone)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent herbs										
Emergent reeds/rushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z)

29/04/94 13:57 00151 624033

NRA Water Nugent

0004

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SWEEP UP OVER 500m

ENTER SITE NUMBER 967

LAND USE WITHIN 50m OF RIVER (use E for 33% banklength) or if present:

	L	R	L	R
Bracken/mast woodland	E			
Coniferous plantation				
Moored boats				
Scrub/rough pasture				
Reg. marsh, fen				
Improved/unimproved grass				
Tilled land				
Suburban/urban development				

LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 15

BANK PROFILES WITHIN 50m (use E for 33% banklength) or if present:

	L	R	L	R
Natural/unmodified				
Vertical/vertical				
Vertical + toe				
Steep (> 45°)				
Grass				
Composite				
Artificial/unmodified				
Revetment				
Reinforced - whole bank				
Reinforced - top only				
Reinforced - toe only				
Artificial two-stage				
Peached				

EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

	Left	Right	E 2/3%	None	Present E
None	<input type="checkbox"/>	<input type="checkbox"/>			
Isolated/heather	<input type="checkbox"/>	<input type="checkbox"/>			
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>			
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>			
Scattered/continuous	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Continuous	<input type="checkbox"/>	<input type="checkbox"/>			
Shading of channel					
Overhanging boughs					
Exposed bankside roots					
Underwater tree roots					
Fallen trees					
Woody debris					

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles = 12	Pools = 1	Unvegetated Point Bars = 1	Vegetated Point Bars = 1
Waterfall/whitewater	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (slow/slide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (stagnant)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unvegetated mid-channel bars				
Vegetated mid-channel bars				
Minor islands				
Unvegetated side bar				
Vegetated side bar				
Artificial				

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	RR	CL	EA	CL	EA	EA
- bank modification (one entry only)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
- bank feature(s)	NS	SL	SL	SL	NS	NS	NS	NS	NS	NS
CHANNEL										
Predominant channel substrate (one entry only)	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Predominant flow type (one entry only)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
- channel modification(s)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
- channel feature(s)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RIGHT BANK										
Predominant bank material (one entry only)	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
- bank modification (one entry only)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
- bank feature(s)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
H. VEGETATION STRUCTURE (to be assessed over a 10m wide zone; fill in each box with one entry only)										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NS)	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NS)	S	S	S	S	S	S	S	S	S	S
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B, S, C or U if appropriate)										
NONE (tick as appropriate)										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 50m (see P or Q)

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SWEET UP OVER 50m ENTER SITE NUMBER 868

J. LAND USE WITHIN 50m OF RIVER (ca 25m banklength) or 2 (if present)

	L	R		L
Broadleaf/mixed woodland			Bog, marsh, fen	
Coniferous plantation			Improved/semi-improved grass	
Moorland/heath			Tilled land	
Scrub/brough pasture			Suburban/urban development	

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 50m (tick 'none' box or estimate percentage banklength if present)

	L	R		L
Natural/unmodified			Artificial/modified	
Vertical undercut			Revetted	
Vertical + toe			Reinforced - whole bank	
Steep (>45°)			Reinforced - top only	
Gravel			Reinforced - toe only	
Concrete			Artificial re-vegetation	
			Partial	

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Staking of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

O. NATURAL CHANNEL FEATURES (tick 'none' box or estimate percentage banklength if present)

Number of: Riffles = 4 Pools = 2 Unvegetated Point Bars = 3 Vegetated Point Bars = 1	None	Present	None	Present	E
Waterfall/spuings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Marshy island(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unvegetated side bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Artificial	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight, uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK	
Bankfull height (m)	1.0	Bankfull width (m)	7.2
Bank height if different (m)	1.2	Bank height if different (m)	1.15
Embanked height (m)		Water depth (m)	0.2
Bed material at site is:		Embanked height (m)	
consolidated <input type="checkbox"/>	clay: algal growth compact, stable		
unconsolidated <input checked="" type="checkbox"/>	clay: fresh clean gravel, easily dislodged, loose		
unknown <input type="checkbox"/>	intercalated or not visible (eg turbid water)		

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. STRUCTURES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick 'none', where appropriate)

None ☒ Number of Culverts = Valves = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wet-scutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

T. CHOKED CHANNEL

Is 5% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

mostly shallow, slightly wavy on left bank. Ploughed field on right bank. No obvious structures.

W. SPECIAL FEATURES (if present, indicate location of each feature; tick box(es))

X. RIVER TYPING (Refer to photographs of river types and indicate which river type(s) the river is)

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN

SS

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYN 7-10-4343; ANDREW BROOKES 7-25-5113

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Grid Reference: TL 674 535

Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 868 River STOUR Mid-section grid reference if different from designated site:

Date 15/6/1994 Start time: 12:55 Surveyor name: J. RICHMANAN P. HANVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) + 2 photos of enhancement work

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

vec ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 869 River: CLEA Mid-section grid reference if different from designated site: _____
 Grid Reference: TL776525
 Date: 24.5.1994 Start time: 15.50 Surveyor name: N. GRIEVE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	NO	SC	SC	SC	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	GP	GP	GP	SA	GP	GP	GP	GP	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	RF	AL	AL	AL	PC
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	NO	NO	SC	NO	NO	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	U	C	C	C	C	NO
LEFT BANK	U	B	C	U	U	S	S	S	S	U
RIGHT BANK	U	U	S	U	U	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	C	S	S	U	U	U	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 10% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Live/woody masses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae	E	E	N	E	E	E	E	E	E	E

Use end column for overall assessment over 500m (use E or /)

† cleared recently

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J. LAND USE WITHIN 50m OF RIVER (tick E (≥ 33% banklength) or / (if present))

	L	R		L	R
Broadleaf/mixed woodland	E	E	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land	E	E
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength % = 95 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m (tick E (≥ 33% banklength) or / (if present))

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut	E	E	Re-sectioned		
Vertical + toe	R		Reinforced - whole bank		
Slope (> 45°)	E	E	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES

* TREES (tick one box per bank) NB See Notes

	Left	Right	E ≥ 33%	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>				
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>				
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>				
Occasional clumps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Continuous	<input type="checkbox"/>	<input type="checkbox"/>				

O. ASSOCIATED FEATURES (tick one box per feature)

	None	Present	E
Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

P. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present	E
Waterfall/cascade	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Torrential flow (rapids)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Laminar flow (run/glide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Stale flow (slack)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Q. VEGETATED CHANNEL FEATURES (tick one box per feature)

	None	Present	E
Unvegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Vegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Mature island(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Unvegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Vegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Artificial	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

* Because of recent clearance!!

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Q. DIMENSIONS AND INFLUENCES

R. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.5	Bank full width (m)	5.5
Bank height if different (m)	2.5	Water width (m)	2.0
Embankment height (m)		Water depth (m)	0.1
Embankment height (m)			

Bed material at site is: consolidated ☒ eluvial: silt/clay growth compact, stable
 unconsolidated ☐ eluvial: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

S. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

T. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☒ Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

U. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

	L	R	CHANNEL
BANKS			
None	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Re-sectioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enhancement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enhancement works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

V. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

W. NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

X. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Deep channel with active erosion in places. Meandering through agricultural fields - at time of survey bank of the S. section was eroding - removal of bankside trees & shrubs.

Y. SPECIAL FEATURES (eg obvious artificial bakings of high interest; incidental sightings)

Trout seen at several locations (Brown Trout)

Z. RIVER TYPING (Refer to photograph of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

AA. TIME TAKEN (hrs) 1.30

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE

TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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SWEEP-UP DIVER 500m ENTER SITE NUMBER

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or J (if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick, none, box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J (if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Reactive		
Vertical + toe			Reinforced - whole bank		
Slope (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick, none, box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)	Left	Right	ASSOCIATED FEATURES (tick one box per feature)	None	Present E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 2	Pools = 3	Unvegetated Point Bars = 0	Vegetated Point Bars = 2
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Laminar flow (run/glide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK			
Bankfull height (m)	1.3	Bankfull width (m)	7.0	Bankfull height (m)	1.3
Bank height if different (m)	2.3	Water width (m)	3.0	Bank height if different (m)	2.3
Embankment height (m)		Water depth (m)	0.3	Embankment height (m)	

Bed material at site is: consolidated ☐ clast: silt/clay growth compact, stable
unconsolidated ☒ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ Inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use only method, then total, tick, none, where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick, none, where appropriate)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	None
Reactive	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☒ LOADS! Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Lowland channel with a fair bit of bog & slow flow. Lowland channel with a fair bit of bog & slow flow. Lowland channel with a fair bit of bog & slow flow.

W. SPECIAL FEATURES (eg oxbow, adjacent habitats of high interest, incidental sightings)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐ (although steeper sides)

Y. TIME TAKEN ☒ 1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)

Solid geology Distance from source (km) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 870 River: ALSEA Mid-section grid reference if different from designated site:

Grid Reference: TL824513

Date: 26/5/1994 Start time: 14:45 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☒
stepped valley floor (terraced) ☐
symmetrical ☐
asymmetrical ☐
gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg. mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank feature(s)	NO	NO	SC	NO	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	CP	SA	SA	GP	SA	SA	SI	SA	GP	
Predominant flow type (one entry only)	RF	AL	AL	AL	AL	AL	PO	AL	AL	
channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
RIGHT BANK										
Predominant bank material (one entry only)	BR	EA	EA	EA	EA	EA	EA	EA	EA	
bank modification (one entry only)	RI	NO	NO	NO	NO	NO	NO	NO	NO	
bank feature(s)	NO	SC	SC	EC	NO	NP	SC	SC	SC	

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	C	S	S	S	O	C	S	S	S	S
LEFT BANK	S	S	S	S	S	U	S	U	U	S
RIGHT BANK	U	U	S	S	U	S	U	U	U	B
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	S	S	U	S	C	C	C	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or J (if present))

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Main Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 871 River: RATTLESDEN Mid-section grid reference if different from designated site: 794594
 Date: 15.10.1994 Start time: 9.15 Surveyor name: N. GRIEVE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but reinforced and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

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G. SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. The abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (see entry only)	CP	CP	CP	CP	CP	CP	CP	CP	CP	CP
Predominant flow type (see entry only)	RF	AL	AL	AL	RF	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	DA	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	SC	NO	NO	NO	NO	NO	NO	SC

I. VEGETATION STRUCTURE (to be assessed over a 10m x 1m transect) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	C	C	S	S	S	S	S	S	S

J. CHANNEL VEGETATION TYPES (to be measured at one site on a straight uniform section, preferably across a riffle)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Upland/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Fine-flowering										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (see E)

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K. LAND USE WITHIN 50m OF RIVER (to be measured at one site on a straight uniform section, preferably across a riffle)

	L	R		L	R
Broadleaf/mixed woodland			Box, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

M. BANK PROFILES WITHIN 500m (to be measured at one site on a straight uniform section, preferably across a riffle)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Reinforced		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - toe only		
Gentle			Reinforced - toe only		
Composite			Artificial toe-stage		
			Poached		

N. CHANNEL DIMENSIONS (tick "none" box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

O. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

	Left	Right	ASSOCIATED FEATURES	Left	Right
None			E & JJK		
Isolated/scattered			Shading of channel		
Regularly spaced, single			Overhanging boughs		
Occasional clumps			Exposed bankside roots		
Semi-continuous			Underwater tree roots		
Continuous			Fallen trees		
			Woody debris		

P. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of:	Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade					
Torrential flow (rapids)					
Laminar flow (run/glide)					
Stale flow (back)					
Exposed bedrock					
Exposed boulders					

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Q. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.4	Bank full width (m)	6.5
Bank height if different (m)	2.5	Water width (m)	2.5
Embed of height (m)		Water depth (m)	0.1

Bed material at site is: consolidated ☐ chunky/slip growth compact, stable ☐
 unconsolidated ☒ chunky/fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ loose/cobble or not visible (eg bedrock water)

Location of measurements is: riffle ☒ run or glide ☐ pool ☐ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

S. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 0

T. EVIDENCE OF RECENT MANAGEMENT (Obvious signs and best)

	BANKS	CHANNEL
None		
Revetting		
Dredging		
Bank moving		
Enhancement		

U. CHOICE CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES (tick boxes; no need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

W. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Deep channel running through mixed woodland. Top 1/3 riffles, remainder laminar glide over sand.

X. SPECIAL FEATURES (eg adverse, adjacent habitats of high interest; historical significance)

Kingfisher seen.

Y. RIVER TYPE (Refer to photographs of river type and indicate which resembles the river)

Number (1-14) ☐ None of them ☒ (could be 12 ish - but in woods)

Z. TIME TAKEN (hr:min:sec)

1 hr 10 min 30 sec

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RIBA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPING NUMBERS: PETER FOX 931-2146; PAUL RAYEN 916-0443; ANDREW BROOKES 925-5111

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SWEEP UP OVER STATION ENTER SITE NUMBER 372

LAND USE WITHIN 500m OF RIVER Use E (is 33% banklength or 1/3 period)

Barren/undisturbed			Bag, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength % = 70 Right bank: None ☐ Banklength % = 80

BANK PROFILES WITHIN 500m Use E (is 33% banklength or 1/3 period)

Natural/undisturbed			Artificial/modified		
Vertical/undisturbed			Reinforced		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Grails			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)	Left	Right	ASSOCIATED FEATURES (tick one box per feature)	None	Present	E
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/clustered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Understorey tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =	
Tick one box per feature	None Present E	None Present E	None Present E	
Waterfalls/cascades	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/slide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
2.0	10.0	2.0
Bank height if different (m)	Water width (m)	Bank height if different (m)
	9.5	
Channel bed height (m)	Water depth (m)	Channel bed height (m)
	1.5	

Bed material at site is: consolidated ☐ chest slight growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ loose or not visible (e.g. boulders)

Location of measurements is: riffle ☐ run or glide ☒ ocker ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then tally tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Revetting <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>
	State <input type="checkbox"/>

CHOKED CHANNEL (tick one box)

Is 25% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es), No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Lowland clay channel - slow flowing, straight sided banks
last so sign of embankment. Plenty of emergent veg.

SPECIAL FEATURES (tick one box, additional features of high interest indicated separately)

RIVER TYPING (Refer to photographs of river type and indicate which resembles the river)

Number (1-14) 13 Name of dam 13 BUT WITH STEEPENED BANKS !!

TIME TAKEN 3/4/94

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYEN 7-18-430; ANDREW BROOKES 7-25-3712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Platform category
Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number 372 River name River Lifford Mid-section grid reference if different from designated site
Grid Reference TM 075562 Date 29.4.1994 Sun time 13.15 Surveyor name N. CREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

vee ☐
concave/bowl ☐
stepped valley floor (terraced) ☐
symmetrical ☒
asymmetrical ☐
gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (e.g. box reinforced) ☐
open, little or no obvious reinforcement, but resloped and/or realigned ☐
open, but predominantly artificially dug (e.g. mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification (semi-natural) ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (to be carried out on a straight uniform section, preferably across a riffle)

Spot check 1 is at upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be carried out across channel width at 1m wide band)

Fill in each box before moving onto H and I of each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	KL	KL	KL	KL	KL	KL	KL	KL	KL	KL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	SC	SC	SC	SC	SC	SC	SC	SC	SC

VEGETATION STRUCTURE (to be carried out across channel width at 1m wide band; fill in each box only one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	S	U	S	U	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	U	S	U	S	S	NO	NO	NO

CHANNEL VEGETATION TYPES (tick one box only, additional features of high interest indicated separately)

NONE (tick as appropriate)

Livingstonia/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (one E or V)

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SWEET-UP OVER 500m ENTER SITE NUMBER 220

LAND USE WITHIN 50m OF RIVER (Use E or 33% banklength if present)

	L	R		L	R
Broads/limited woodland	E		Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick none box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 0 Right bank None ☐ Banklength % = 10

BANK PROFILES WITHIN 500m (Use E or 33% banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick none box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	E > 33%			
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ASSOCIATED FEATURES (tick one box per feature)

NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade	8	1	2	0
Torrential flow (rapids)				
Laminar flow (run/glide)				
Stilt flow (slack)				
Exposed bedrock				
Exposed boulders				

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably above a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m) 1.0	Bankfull width (m) 9.0	Bankfull height (m) 1.0
Bank height if different (m) 2.0	Water width (m) 7.0	Bank height if different (m) -
Embanked height (m) -	Water depth (m) 0.2	Embanked height (m) -

Bed material at site is: consolidated ☒ clastic: algal growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally, or write, then total; tick none where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 2

EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick boxes)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es) as used to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Tree-lined channel - with no trees, except for a few trees on LHS. Spot checks good.

SPECIAL FEATURES (eg ponds, adjacent habitats of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

TIME TAKEN (hours:minutes)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5112

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BACKGROUND INFORMATION: This information is being collected separately

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 880 River: CLETTOR Mid-section grid reference if different from Grid Reference: 5445446

Date: 9.16.1994 Start time: 15.30 Surveyor name: N. GRIELE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

vec ☐
concave/bowl ☒
stepped valley floor (terraced) ☐
symmetrical ☐
asymmetrical ☐
gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EB	BR	EA	EA	EB	BC	EA	EA	CO	
- bank modification (one entry only)	NO	RI	NO	NO	NO	NO	NO	NO	NO	
- bank feature(s)	NO	NO	NO	VS	NO	NO	SC	NO	NO	
CHANNEL										
Predominant channel substrate (one entry only)	AP	LO	CO	CO	LO	GP	AP	PP	CO	PO
Predominant flow type (one entry only)	AL	RE	AL	RE	RE	AL	AL	RE	RE	
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	
- channel feature(s)	RO	NO	NO	NO	NO	NO	NO	NO	NO	
RIGHT BANK										
Predominant bank material (one entry only)	BR	EA	EA	EA	EA	EA	EA	EA	CO	
- bank modification (one entry only)	RI	NO	NO	NO	NO	NO	NO	NO	NO	
- bank feature(s)	NO	SC	NO	VS	NO	NO	NO	NO	VS	

VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	C	C	C	C	C	C	C	C	
LEFT BANK	U	U	U	U	U	U	U	U	U	
RIGHT BANK	U	U	U	U	U	U	U	U	U	
RIGHT RIPARIAN ZONE (if none, enter NO)	C	NO	NO	NO	NO	NO	NO	NO	NO	

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; use E or 33% area if present)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/beds										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or 33%)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

ALSO: BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Distance from source(km) Mean Annual Flow category (1-10) Planform category

FIELD SURVEY DETAILS: Complete all questions

Site number: 881 River: TE IF 1 Mid-section grid reference if different from designated site: 5556463

Date: 21.6.1994 Start time: 14:00 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☐ Yes ☒ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C.1. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resedged and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPES (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	B	U	B	U	B	U	B	U	B
RIGHT BANK	S	B	U	B	U	B	U	B	U	B
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use E for 10% cover or 1m spread)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Upriver/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER: 881

LAND USE WITHIN 50m OF RIVER (use E for 10% cover length or J if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

RIGHT BANK PROFILES WITHIN 500m (use E for 10% bank length or J if present)

Left bank: None ☐ Banklength % = 30 Right bank: None ☐ Banklength % = 30

NATURAL/UNMODIFIED

	L	R		L	R
Vertical/unmodified			Artificial/modified		
Vertical + toe			Resedged		
Slope (> 45°)			Reinforced - whole bank		
Grass			Reinforced - top only		
Composite			Reinforced - toe only		
			Artificial two-stage		
			Pierced		

LEFT BANK PROFILES WITHIN 500m (use E for 10% bank length or J if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (tick one box per feature)
None			Shading of channel
Isolated/scattered			Overhanging boughs
Regularly spaced, single			Exposed bankside roots
Occasional clumps			Under-story tree roots
Semi-continuous			Fallen trees
Continuous			Woody debris

OBS. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present E	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/slides)				
Swirl flow (eddy)				
Exposed bedrock				
Exposed boulders				

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J. DIMENSIONS AND INFLUENCES

K. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.5	Bank full height (m)
Bank height if different (m)	1.75	Bank height if different (m)
Bank full width (m)	30.0	Bank full width (m)
Water width (m)	23.0	Water width (m)
Bank full depth (m)	0.4	Bank full depth (m)
Water depth (m)		Water depth (m)

Bed material at site is: consolidated ☐ loose: silt/clay growth compact, stable ☐
unconsolidated ☐ loose: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ loose: coarse or not visible (eg bedrock) ☐

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES (Use only method, then total; tick 'none' where appropriate)

None	Number	Culverts	Walls	Bridges	Outfalls

S. EVIDENCE OF RECENT MANAGEMENT (Gentle signs: tick boxes)

BANKS	CHANNEL
None	None
Resedging	Dredging
Bank-erosion	Wood-cutting
Enhancement	Enhancement works
	Stake

T. CHOICED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m that of with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if not to be estimated abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if and where representative of site at a glance)

A mostly laminar channel, with earth banks, of the whole the left is a gravelly rise for which - being more like a -

W. SPECIAL FEATURES (if obvious, adjacent habitat of high interest, incidental sightings, 10-50-100m)

Extensive aquatic vegetation.

X. RIVER TYPING (Refer to photographs of river type and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TE. HELPLINE NUMBERS: PETER FOX 9331316; PAUL RAYN 716433; ANDREW BROOKES 7255712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4

SWEEP-UP OVER 300m ENTER SITE NUMBER 89

J. LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or J if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	E	E
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 50

L. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or J if present

	L	R		L	R
Natural/unmodified			Artificial/modifier		
Vertical undercut			Recessed		
Vertical + toe			Reinforced - whole bank		
Slope (> 35°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial toe stage		
			Peached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E ≥ 33%	None	Present	E
None						
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O. NATURAL CHANNEL FEATURES (Record total number of riffles, pools and point bars)

	None	Present	E
Waterfall/cascade			
Torrential flow (rapids)			
Laminar flow (run/glide)			
Static flow (slack)			
Exposed bedrock			
Exposed boulders			

Unvegetated Point Bars = 2 Vegetated Point Bars =

Unvegetated mid-channel bars = Vegetated mid-channel bars =

Unvegetated side bar = Vegetated side bar =

Artificial =

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☒ clastic: algal growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 300m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick "none" where appropriate)

None ☐ Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick boxes)

BANKS	L	R	CHANNEL
None			None
Revetting			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes): No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Write in 100 words or less)

Mainly shallow, cobbly substrate with almost 100% cover of filamentous algae. Limited riparian zone, mostly quite narrow.

W. SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, incidental sightings)

Deeper, grey washbanks. Local man reported otter seen (winter)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TE. TELEPHONE NUMBERS: PETER FOX 7-31-5140; PAUL BAYES 7-16-434; ANDREW BRIDGES 7-14-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 882 River: TWRECH Mid-section grid reference if different from designated site: S2 64 8 445

Date: 11.5.1994 Start time: 17.00 Surveyor name: J. BLACKBURN, A. CROWE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	BR	EA	EA	EA	EA	BC	EA	EA	EA
- bank modification (one entry only)	NB	RI	NO	NO	NO	RI	NO	NO	NO	NO
- bank feature(s)	NA	NO	SC	SC	NO	SC	EE	EL	ET	NO
CHANNEL										
Predominant channel substrate (one entry only)	BO	CO	CO	GP	CO	CO	CO	CO	CO	CO
Predominant flow type (one entry only)	AL	EL	RF	AL	AL	RF	RF	AL	PO	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	RO	NO	NO	NO	RO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	GP	EA	GP	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	SC	SB	EE	PB	NO	NO	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide width). Fill in each box with one entry only

B = base U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	NO	C	C	S	NO	NO	NO	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	C	S	U	S	B	B	B	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	C	B	B	S	U	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes: tick one entry only: Use E (≥ 33% bank) or J if present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

Use end column for overall assessment after 500m (one E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 883 River Gwent off road mid-section grid reference if different from designated site: S N 755 457

Date 11.11.1994 Start time: 11:30 Surveyor name: J. Blackmore

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☒ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ intermittent ☐ riffle pool ☒ static ☐ step pool ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	CP	CP	EA	EA	CP	BL	EA	FL	EA	EA
- bank modification (see entry only)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
- bank features	VS	VS	SL	N0	VP	SB	N0	N0	N0	N0
CHANNEL										
Predominant channel substrate (see entry only)	CO	CP	CP	CP	CO	CP	CP	CP	CP	CP
Predominant flow type (see entry only)	RF	RF	PO	AL	RF	RF	RF	RF	RF	RF
- channel modification	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
- channel features	N0	RO	RO	RO	RO	RO	RO	RO	RO	RO
RIGHT BANK										
Predominant bank material (see entry only)	BL	EA	CP	EA	EA	EA	CP	EA	EA	EA
- bank modification (see entry only)	N0	N0	N0	N0	N0	N0	N0	N0	N0	N0
- bank features	N0	N0	PB	N0	EC	SL	SB	N0	N0	SL

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare L = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter N0)	L	L	L	LD	C	L	N0	S	LD	N0
LEFT BANK	S	S	C	S	B	C	S	S	S	S
RIGHT BANK	S	S	B	S	B	C	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter N0)	C	C	C	C	N0	N0	N0	N0	LD	N0

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (at 10% cover) or / (greater))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Upriver/undergrowth										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-flowing										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SWEEP-UP OVER 500m ENTER SITE NUMBER

J. LAND USE WITHIN 50m OF RIVER Use E (at 10% banklength) or / (if present)

	L	R
Broadleaved woodland	E	E
Coniferous plantation		
Moorland heath		
Scrub/rough pasture	E	E
Other		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength S = 50 Right bank None ☐ Banklength S = 50

L. BANK PROFILES WITHIN 50m Use E (at 10% banklength) or / (if present)

	L	R
Natural/unmodified		
Vertical/vertical		
Vertical + toe		
Steep (> 45°)	E	E
Grate		
Composite		
Artificial/modified		
Revetment		
Revetment - whole bank		
Revetment - top only		
Revetment - toe only		
Artificial toe-steps		
Pierced		

M. ENHANCEMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength S = 200 Right bank None ☐ Banklength S = 20

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	L	R
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bank-side roots		
Underwater tree roots		
Fallen trees		
Washed debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles	Number of Pools	Number of Point Bars
Number of Riffles	17	12	2
Number of Pools			
Number of Point Bars			

P. FLOW CHARACTERISTICS

	None	Present
Unvegetated mid-channel bars		
Vegetated mid-channel bars		
Island (bank)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4

Q. CHANNEL DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.75	Bank full height (m)
Bank height if different (m)		Bank height if different (m)
Bank width (m)	7.5	Bank width (m)
Water depth (m)	0.1	Water depth (m)
Embankment height (m)		Embankment height (m)

Bed material at site is: consolidated ☐ loose: silt/clay growth compact, rubble ☐
unconsolidated ☒ loose: fresh clean gravel, easily disturbed, loose ☐
unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick 'none' where appropriate

None	Number of	Channel	Wetland	Effluent	Outfall

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick boxes

	L	R	Channel
None			
Revetment			
Bank-mowing			
Enhancement			

T. CHOKED CHANNEL

Is 35% or more of the channel or at 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Clash Hedges ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Heavily shaded stream with many riffles and pools - current banks, spot checks

W. SPECIAL FEATURES (if none, indicate habitat of high interest, incidental sightings)

One to two large (Lentils) - Upper - Full (Lentils) - Lower

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ Name of them ☐

Y. TIME TAKEN 1.5 hours

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NARA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, HARRINGTON, NORTHERN IRELAND, BT27 1JH
TELEPHONE NUMBERS: PETER FOX 125114; PAUL RAYEN 216431; ANDREW BROOKS 215111

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m: 902 ENTER SITE NUMBER: 902

LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or U (percent)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE: (tick, none, but or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 15 Right bank: None ☐ Banklength % = 30

BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or U (percent)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Resectioned		
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank		
Slope (> 45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only		
Gentle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only		
Composite	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial two-stage		
			Poached		

EMBANKMENTS: (tick, none, but or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 15 Right bank: None ☐ Banklength % = 30

EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
<u>5</u>	<u>1</u>	<u>1</u>	<u>1</u>
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Static flow (slack)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	<u>1.75</u>	Bankfull height (m)
Bank height if different (m)	<u>1.6</u>	Bank height if different (m)
Embankment height (m)	<u>0.2</u>	Embankment height (m)

Bed material at site is: consolidated ☒ clear: silt/clay growth compact, stable
unconsolidated ☐ clear: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use any method, then tick, none, where appropriate

None ☒ Number of Culverts = 1 Weirs = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

BANKS: None ☒ Resectioning ☐ Bank-moving ☐ Enhancement ☐

CHANNEL: None ☒ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES: (tick box(es)) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site as a whole)

Small fast-flowing channel - laminar, both top & bottom eroded extensively covered with trees (Willows & Alders) pool checks only

SPECIAL FEATURES: (tick one box only)

RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) 1 None of them ☐

TIME TAKEN: 10

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-23-5712

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BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) 11.15 Slope 11.15 Mean Annual Flow category (1-10) 1

Solid geology 11.15 Drift geology 11.15 Planform category 1

Distance from source (km) 11.15

FIELD SURVEY DETAILS: Complete all questions

Site number: 902 River: DOVE Mid-section grid reference if different from designated site: B-447CHINSON

Grid Reference: SP855474

Date: 11.15.1994 Start time: 11.15 Surveyor name: J. ARREVE & B. HATCHINSON

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification (semi-natural) ☒

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CL	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE: (to be assessed across channel within a 1m wide zone)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or U)

(176)

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A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 903 River: TOVE Mid-section grid reference if different from designated site: _____
 Date: 14.6.1994 Start time: 2-30 Surveyor name: N. GRIEVE
B. HUTCHINSON
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL:										
Predominant channel substrate (one entry only)	S	S	S	S	S	S	S	S	S	S
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 50m wide stretch). Fill in each box with site entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	C	NO	S	C	S	NO	S	C	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	U	U	U	U	U	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	U	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: E = 10% cover or less, V = present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/beds										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

VERY CUCKED WITH REEDS Use end column for overall assessment over 500m (use E or V)

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J. LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or V (present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/crough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 65 Right bank None ☐ Banklength % = 15

L. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or V (present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
- Vertical/horizontal			- Resectioned		
- Vertical + toe			- Reinforced - whole bank		
- Step (> 45°)			- Reinforced - top only		
- Gravel			- Reinforced - toe only		
- Composite			- Artificial two-stage		
			- Poached		

M. EMBANKMENTS: (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = _____ Right bank None ☒ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES:

	LA	Right		None	Present	E
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bankside roots			
Occasional clumps			Underwater tree roots			
Semi-continuous			Fallen trees			
Continuous			Woody debris			

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

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P. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	<u>1.5</u>	Bank full width (m)	<u>10.0</u>
Bank height (if different) (m)	<u>1.5</u>	Water width (m)	<u>3.95</u>
Embank height (m)	<u>—</u>	Water depth (m)	<u>0.15</u>
Embank height (m)	<u>—</u>	Embank height (m)	<u>—</u>

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
 unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total; tick 'none' where appropriate

	None	Number of	Culverts	Weirs	Bridges	Outfalls

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs tick box(es)

	L	R	CHANNEL
None			
Resectioning			
Bank-moving			
Enhancement			

T. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒ VERY CUCKED

U. NOTABLE NUISANCE PLANT SPECIES: tick box(es) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site as a whole)

Loosened channel, heavily choked in upper 1/3 of survey reach. (side channel) rises to form a gravel bar in the down.

W. SPECIAL FEATURES: eg ashore, adjacent habitats of high interest, incidental sightings

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of the above ☒ Type 6, but with steeper banks

Y. TIME TAKEN: 1.4

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-3146; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5712

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SWEEP-UP OVER 500m

ENTER SITE NUMBER 904

LAND USE WITHIN 50m OF RIVER (in E or W 33% banklength or 2 if present)

Broadleaved woodland	L	R	Bog, marsh, fen	L	R
Coniferous plantation			Improved/semi-improved grass	E	E
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 30 Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (in E or W 33% banklength or 2 if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	✓	✓	Resectioned		
Vertical + toe	✓	✓	Reinforced - whole bank	✓	✓
Steep (> 45°)	✓	✓	Reinforced - top only		
Gentle	✓	✓	Reinforced - toe only		
Composite	✓	✓	Artificial two-stage		
			Poached		

EMBANKMENTS (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None	Left	Right	E or W	None	Present	E
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ASSOCIATED FEATURES (tick one box per feature)

NATURAL CHANNEL FEATURES (Record actual number of riffle, pool and point bars)

Number of Riffles = 11	Pools = 0	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Tick one box per feature	None	Present	None
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)
Stasis flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	2.0	Bankfull height (m)
Bank height if different (m)	3.0	Bank height if different (m)
Embanked height (m)	0.3	Embanked height (m)

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only method, then total, tick none, where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = 2 Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious recent work)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wedge-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if you check representative of site as a whole)

Wetland channel - mostly low water. Moderate section in middle of stream reach - concrete bridge & artificial side bank channel

SPECIAL FEATURES (eg obvious, adjacent habitats of high interest, localities, etc)

RIVER TYPING (Refer to photos of first type and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN: 1.15

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-11-1140, PAUL RAYEN 7-10-4343, ANDREW BROOKES 7-25-5712

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 904 River: OWE Mid-section grid reference if different from designated site: SP653451

Date: 13/6/1994 Start time: 16:00 Surveyor name: A. GRIEVE & B. HUTCHINGS

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification (semi-natural) ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and F at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	E	E	E	C	E	E	E	E	E	E
Predominant bank material (one entry only)	E	E	E	C	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	R	N	N	N	N	N	N
- bank feature(s)	N	N	N	S	N	N	N	N	N	N
CHANNEL	C	C	C	B	B	B	B	B	B	B
Predominant channel substrate (one entry only)	C	C	C	B	B	B	B	B	B	B
Predominant flow type (one entry only)	A	A	A	R	R	R	R	R	R	R
- channel modification(s)	N	N	N	R	N	N	N	N	N	N
- channel feature(s)	N	N	N	R	N	N	N	N	N	N
RIGHT BANK	C	C	C	E	E	E	E	E	E	E
Predominant bank material (one entry only)	C	C	C	E	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	R	N	N	N	N	N	N
- bank feature(s)	N	N	N	S	N	N	N	N	N	N

VEGETATION STRUCTURE (to be assessed over a 10m wide section). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	N	N	N	N	N	N	N
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N

VEGETATION TYPES (fill in different boxes with one entry only (eg, 15m wide, 10m wide, etc))

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

905

906
29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

A. SWEEP-UP OVER 500m ENTER SITE NUMBER **906**

B. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or U (if present)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land	E	E
Scrub/rough pasture			Suburban/urban development	E	

C. LINEAR EXTENT OF RIPARIAN ZONE (tick, none, has or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

D. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or U (if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Paired		

E. EMBANKMENTS (tick, none, has or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

F. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None	Left	Right	E ≥ 33%	None	Present	E
Isolated/scattered						
Regularly spaced, single						
Occasional clumps						
Semi-continuous						
Continuous						

ASSOCIATED FEATURES (Tick one box per feature)

None	Present	E
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

G. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of: Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
None	None	None	None
Present	Present	Present	Present

H. RIVER TYPING Refer to photographs of river types and indicate which best describes the site

Number (1-14) ☐ None of them ☐

I. TIME TAKEN 42 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2150; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

906
29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

J. CHANNEL DIMENSIONS (to be measured at one site on a straight, uniform section, preferably across a firm silt)

LEFT BANK	CHANNEL	RIGHT BANK	
Bank full height (m)	1.0	Bank full width (m)	6.0
Bank height if different (m)	2.0	Water width (m)	3.3
Embanked height (m)		Water depth (m)	0.70

Bed material at site is: consolidated ☒ close: silt/growth compact, stable - C L R /
unconsolidated ☐ close: fresh clean gravel, sally dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

K. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

L. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total tick, none = here appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls = 6

M. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

N. CHOKED CHANNEL

Is 33% or more of the channel over 500m length? NO ☐ YES ☒

O. NOTABLE NUISANCE PLANT SPECIES (tick box(es) - No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

P. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

Left bank: steep, dense, vertical - little or no bank top. Right bank: steep, dense, vertical - little or no bank top. Channel: steep, dense, vertical - little or no bank top.

Q. SPECIAL FEATURES eg oxbow, adjacent habitats of high interest, incidental riparian vegetation

R. RIVER TYPING Refer to photographs of river types and indicate which best describes the site

Number (1-14) ☐ None of them ☐

S. TIME TAKEN 42 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2150; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

906
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A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 906 River Elbow Creek Mid-section grid reference if different from Grid Reference: T1031458

Date: 23.1.1994 Start time: 2.30 Surveyor name: P. M. THORNTON / TONY CARRICK

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 28

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

906
29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be carried across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	N	N	N	N	N	N	N	N	N	N
CHANNEL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant channel substrate (one entry only)	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	N	N	N	N	N	N	N	N	N	N
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	N	N	N	N	N	N	N	N	N	N

H. VEGETATION STRUCTURE (to be carried across a 10m wide zone, fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only, use E (≥ 33% bank), U (if present), N (if not present))

	1	2	3	4	5	6	7	8	9	10
None (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or U)

9 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 907 River: Lual Mid-section grid reference if different from designated site: _____
 Grid Reference: T.L. 196 446
 Date: 26.1.1994 Start time: 1710 Surveyor name: PANG BEAULIE / TOBY CAREICK
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box) 18
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 19
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/boat ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	11
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	WP	EA	EA	EA	EA	EA	CC
- bank modification (one entry only)	No	RS	No	RI	No	No	No	No	No	RI
- bank feature(s)	SC	No	No	No	No	No	No	No	No	No
CHANNEL										
Predominant channel substrate (one entry only)	GP	CL	GP	GP	GP	GP	GP	GP	GP	CL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	No	No	No	No	No	No	No	No	No	DA
- channel feature(s)	No	No	No	No	No	No	No	No	No	MI
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	CC	EA	EA	CC	EA	EA	CC	CC
- bank modification (one entry only)	RS	RI	RI	RS	No	RI	No	No	RI	RI
- bank feature(s)	No	No	No	No	No	No	No	No	No	No

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	11
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	U	U	S	U	U	U	U	U
LEFT BANK	U	U	U	B	S	U	U	U	U	U
RIGHT BANK	U	U	S	S	S	B	S	S	S	No
RIGHT RIPARIAN ZONE (if none, enter NO)	No	No	No	No	No	No	S	S	No	No

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry; use E for 10% or more, S for 1-9%)

	1	2	3	4	5	6	7	8	9	11
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or S)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J. LAND USE WITHIN 50m OF RIVER: Use E for 33% banklength or S for 1-9% banklength

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 15

L. BANK PROFILES WITHIN 500m: (tick 'none' box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Post-dredged		

M. EMBANKMENTS: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES:

	Left	Right		None	Present
TREES (tick one box per bank)			ASSOCIATED FEATURES (tick one box per feature)		
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of:	Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Torresian flow (rapid)					
Laminar flow (run/glide)					
Static flow (slack)					
Exposed bedrock					
Exposed boulders					

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P. CHANNEL DIMENSIONS AND INFLUENCES:

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.0	Bankfull width (m)	1.0
Bank height if different (m)	1.2	Water width (m)	1.0
Embankment height (m)		Water depth (m)	1.0
		Embankment height (m)	

Bed material at site is: consolidated ☐ close: algal growth compact, stable
 unconsolidated ☒ close: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: tick 'none' where appropriate

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 1

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs: tick box(es)

	L	R		L	R
BANKS			CHANNEL		
None			None		
Resectioning			Dredging		
Bank-moving			Weed-cutting		
Enhancement			Enhancement works		

T. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: Indicate if spot checks representative of site as a whole

Fast flowing river with boulders with R's from long on R.R. with extensive vegetation on left bank.

W. SPECIAL FEATURES: eg exposure, adjacent habitats of high interest, incidental, riparian

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐ 7

Y. TIME TAKEN: 60 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, 104 NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HB
 HELPLINE NUMBERS: PETER FOX 7-21-2144; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

A. SWEET-UP OVER 500m ENTER SITE NUMBER **908**

B. LAND USE WITHIN 500m OF RIVER (Use E (≥ 33% banklength) or U (present))

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

C. LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **150** Right bank None ☐ Banklength % = **100**

D. BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or U (present))

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

E. ENBANKMENTS (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **150** Right bank None ☐ Banklength % = **100**

F. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None	Left	Right	Associated Features	None	Present	E
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	E 2.33%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

G. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
None	None	None	None
Present	Present	Present	Present

H. CHANNEL VEGETATION (Tick one box per feature)

None	Present	None	Present
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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I. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK	
Bankfull height (m)	0.75	Bankfull width (m)	3.5
Bank height if different (m)	1.55	Water width (m)	2.0
Embanked height (m)	0.0	Water depth (m)	0.20
		Embanked height (m)	0.30

J. Bed material at site is: consolidated ☒ clasts: s'gd growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

K. Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

L. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

M. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick none, where appropriate)

None ☐ Number of Culverts = **0** Weirs = **0** Bridges = **1** Outfalls = **0**

N. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			State

O. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

P. NOTABLE NUISANCE PLANT SPECIES (tick box(es); or add to separate sheet)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

Q. BRIEF DESCRIPTIVE SENTENCE (underline if spot check representative of site as a whole)

old hard stone clay; very obvious signs of bankside tree marks cause little type flow

R. SPECIAL FEATURES (eg exposed, adjacent habitat of high interest, incidental sightings)

Emerging weedy hatch (large ones)

S. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) **13** None of them ☐

T. TIME TAKEN **60 mins**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NW NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS
HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) **100** Slope **1:10** Mean Annual Flow category (1-10) **10**
Solid geology **1** Drift geology **1** Platform category **1**
Distance from source (km) **1**

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: **908** River **Ala** Mid-section grid reference if different from designated site: **TL265 445**
Date: **29.4.1994** Start time: **3:30** Surveyor name: **P. HENNELL / J. CARRICK**
Are conditions affecting survey? No ☒ Yes ☐ If yes, state **...**
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box) **14**
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) **15 + 16**
Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	CL	EA	CL	EA	EA	CL	EA	EA	CL
bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
bank feature(s)	No	No	No	SC	SC	No	No	No	No	RS
CHANNEL										
Predominant channel substrate (one entry only)	CL	CL	GP	GP	CL	CL	CL	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	AL	AL	AL	AL	AL	RF	RF	AL
channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANK										
Predominant bank material (one entry only)	EA	CL	CL	CL	EA	EA	CL	CL	EA	CL
bank modification (one entry only)	No	No	No	No	No	No	No	No	No	No
bank feature(s)	No	No	No	No	No	No	No	No	No	No

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	S	S	U	U	U	U	U	U	U
LEFT BANK	U	U	B	U	U	U	U	U	U	U
RIGHT BANK	S	U	U	S	S	U	S	S	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	U	S	C	C	S	C	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or U (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or U)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

AND BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 909 River: Wendell Mid-section grid reference if different from designated site: 20421

Date: 21 May 1994 Start time: 045 Surveyor name: Paul Hearn / Roy Carr

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorgo

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CL	CL	EA	CL	CL	CL	EA	EA	CL	
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	No	No	No	No	No	No	No	No	No	No
CHANNEL										
Predominant channel substrate (one entry only)	CL	CL	CL	CL	CL	AR	ST	ST	ST	ST
Predominant flow type (one entry only)	AL	AL	RF	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	RS	CV	No	No	No	No
- channel feature(s)	No	No	No	No	No	No	No	No	No	No
RIGHT BANK										
Predominant bank material (one entry only)	CL	CL	CL	CL	CL	EA	RR	EA	EA	
- bank modification (one entry only)	RS	RS	RS	RS	RS	RF	No	No	No	No
- bank feature(s)	No	No	No	No	No	No	No	No	No	No

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with appropriate entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	S	U	U	U	No	U	C	No	No
LEFT BANK	U	B	S	U	S	B	S	S	S	U
RIGHT BANK	U	B	S	S	S	B	U	U	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	S	S	S	U	No	C	No	C	C

I. CHANNEL VEGETATION TYPES (to be assessed over a 10m wide stretch). Fill in each box with appropriate entry only

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Submerged										
Emergent										
Emergent root/sedges										
Flowering										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (see E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUM.

J. LAND USE WITHIN 50m OF RIVER (Use E (2-3% banklength) or / if present)

	L	R
Broadleaf/deciduous woodland		
Coniferous plantation		
Arable/rough pasture		
Scrub/rough pasture		
Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 60 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m (Use E (2-3% banklength) or / if present)

	L	R
Natural/unmodified		
Vertical/handcut		
Vertical + toe		
Steep (> 45°)		
Gentle		
Composite		
Artificial/unmodified		
Resectioned		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Pitched		

M. EMBANKMENTS (tick one box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. PRESENT EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Scattered clumps		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present
Number of riffles =		
Waterfall/cascade		
Torrential flow (rapid)		
Laminar flow (pool/slide)		
Static flow (slack)		
Exposed bedrock		
Exposed boulders		
Unvegetated mid-channel bars		
Vegetated mid-channel bars		
Marshy island(s)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4

P. DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

Q. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.9	Bankfull width (m)	2.5
Bank height if different (m)	1.4	Water width (m)	1.4
Bank height if different (m)	1.4	Water depth (m)	0.25
Embank height (m)	No	Embank height (m)	No

Did material at site: consolidated ☒ loose: slight growth compact, stable ☐
unconsolidated ☐ loose: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☐ race or glide ☒ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

S. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)

None ☐ Number of Culverts = 2 Weirs = 1 Bridges = 1 Outfalls = 0

T. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick boxes)

	L	R	CHANNEL
None			
Resectioning			
Bank-moving			
Enhancement (see P. notes)			
Enhancement works			

U. CHANNEL CHANGES (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance

W. Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

X. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Y. SPECIAL FEATURES (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

Z. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ Name of them ☐

AA. TIME TAKEN TO COMPLETE SURVEY (in minutes)

60 min

BB. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TE. TEL: 01925 434343. FAX: 01925 434343.

29 April 1994		RIVER HABITAT SURVEY: 1994 VERIFICATION		Page 4 of 4	
DIMENSIONS AND INFLUENCES					
P. CHANNEL DIMENSIONS, to be measured at one site on a straight uniform section, preferably across a riffle.					
LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	0.9	Bank full width (m)	10.0	Bankfull height (m)	0.9
Bank height if different (m)	1.3	Water width (m)	8.0	Bank height if different (m)	1.3
Embanked height (m)	/	Water depth (m)	1.0	Embanked height (m)	/
Bed material at site is: consolidated <input type="checkbox"/> eluvial: algal growth compact, stable					
unconsolidated <input checked="" type="checkbox"/> eluvial: fresh clean gravel, easily dislodged, loose					
unknown <input type="checkbox"/> inaccessible or not visible (eg turbid water)					
Location of measurements is: riffle <input type="checkbox"/> run or glide <input checked="" type="checkbox"/> other <input type="checkbox"/> (tick one box)					
Q. TRIBUTARIES: (tick one box only)					
Significant tributary within 500m length? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>					
R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: tick none where appropriate.					
None <input type="checkbox"/>	Number of	Culverts =	Weirs =	Bridges =	Outfalls =
S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs: tick box(es).					
BANKS		L		R	
None	<input checked="" type="checkbox"/>	None		<input checked="" type="checkbox"/>	
Resectioning	<input type="checkbox"/>	Dredging		<input type="checkbox"/>	
Dank-mowing	<input type="checkbox"/>	Weed-cutting		<input type="checkbox"/>	
Enhancement	<input type="checkbox"/>	Enhancement works		<input type="checkbox"/>	
T. CHOKED CHANNEL					
Is 33% or more of the channel over 500m choked with vegetation? NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>					
U. NOTABLE NUISANCE PLANT SPECIES: tick box(es). No need to estimate abundance.					
Giant Hogweed <input type="checkbox"/>		Himalayan Balsam <input checked="" type="checkbox"/>		Japanese Knotweed <input type="checkbox"/>	
V. BRIEF DESCRIPTIVE SENTENCE: (indicate if you check representative of site or a whole)					
Slow, deep + meandering, gentle, high steep banks covered with nettles. Soft silted & silty water running bridge.					
W. SPECIAL FEATURES: (if present, add other habitats of high interest: medicinal plants)					
Kingfisher + Mink seen.					
X. RIVER TYPING: Refer to photographs of river type and indicate which resembles the type.					
Number (3-14) <input checked="" type="checkbox"/>		None of them <input type="checkbox"/>			
Y. TIME TAKEN		1 hr			
CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAMPED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. TELEPHONE NUMBERS: PETER FOX 7-21-2110; PAUL HAVEN 7-10-4345; ANDREW BROOKES 7-25-5711.					

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	CL	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	RI	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL:										
Predominant channel substrate (one entry only)	SI	NU	SI	SI	SI	SI	SI	SI	GP	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	BR	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	CC	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	RI	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch). Fill in each box with one entry only

E = bare U = uniform S = simple C = complex Refer in spot-check key

	S	U	S	S	S	C	NO	S	S
LEFT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	S	C	NO	S	S
LEFT BANK	S	U	S	S	S	S	B	S	S
RIGHT BANK	S	S	U	U	S	U	B	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	U	S	S	NO	S	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (2-3% area) or V (greater))

NONE (tick as appropriate)										
Upland/mosses										
Emergent herbs <i>Rorippa</i> <i>Artemisia</i>	✓						✓			✓
Emergent reeds/sedges <i>Sagittaria</i> <i>Phalaris</i>	✓	E	F	E	E	✓			✓	E
Floating-leaved <i>Najas</i> <i>Najas</i>	✓		F							
Free-floating						E			✓	E
Ambitious <i>Eelotum</i> <i>Utricularia</i>				✓	✓	✓	✓	✓	✓	✓
Submerged <i>Sagittaria</i> <i>Phalaris</i>	✓			✓	✓	✓	✓	✓	✓	✓
Filamentous algae	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The end returns for a small stream are 100%

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION (This information is being collected separately.)

Altitude(m) / Slope / Solid geology / Drift geology / Distance from source(km) / Mean Annual Flow category (1-10) / Platform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 911 River Bratshaw Mid-section grid reference if different from designated site: Lmmla
Grid Reference: TL 561 467
Date: 16/1/1994 Start time: 14:25 Surveyor name: J. BLACKBURN
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: P. Kenille
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ unbanked ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	WP	WP	CC	CC	BR	
- bank modification (one entry only)	NO	NO	NO	NO	R1	R1	R1	R1	R1	
- bank feature(s)	SC	NO	SC	SC	NO	NO	NO	NO	NO	
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	CP	GP	GP	AR	AR	AR
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	CA
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	R1	DA
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	CC	CC	EA	
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	R1	R1	NO	
- bank feature(s)	SC	SC	SC	SC	EC	NO	SC	NO	NO	

H. VEGETATION STRUCTURE (to be assessed over a 10m wide transect) Fill in each box with one entry only

U = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	C	S	S	S	NO	NO	NO	S
LEFT BANK	S	S	S	U	U	B	B	B	B	B
RIGHT BANK	S	S	S	S	S	S	B	B	B	BL
RIGHT RIPARIAN ZONE (if none, enter NO)	S	C	C	C	S	C	S	S	NO	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (2-3% cover) or V (green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reedbedges (use E)										
Floating-leaved										
Free-floating										
Amphibious Epilobium										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 1

ENTER SITE NUMBER 911

LAND USE WITHIN 500m OF RIVER (Use E (2-3% banklength) or V (green))

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Impervious/improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

J. LINEAR EXTENT OF RIPARIAN ZONE (tick, none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 75 Right bank None ☐ Banklength % = 85

K. BANK PROFILES WITHIN 500m (Use E (2-3% banklength) or V (green))

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

L. EMBANKMENTS (tick, none, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

M. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bankside roots			
Occasional clumps			Underwater tree roots			
Sand-continuous			Fallen trees			
Continuous			Woody debris			

N. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of: Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Tick one box per feature	None Present E	None Present E	None Present E
Waterfall/cascade		Unvegetated mid-channel bars	
Torrential flow (rapids)		Vegetated mid-channel bars	
Laminar flow (run/glide)		Mature island(s)	
Static flow (slack)		Unvegetated side bar	
Exposed bedrock		Vegetated side bar	
Exposed boulders		Artificial	

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Q. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK			
Bank full height (m)	0.65	Bank full width (m)	9.60	Bank full height (m)	0.65
Bank height if different (m)	1.10	Water width (m)	8.60	Bank height if different (m)	1.20
Embanked height (m)		Water depth (m)	0.45	Embanked height (m)	

Bed material at site is: consolidated ☐ cluster: algal growth compact, stable
unconsolidated ☒ cluster: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (Use box, only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick, none, where appropriate

None ☐ Number of Culverts = Weirs = 2 Bridges = 4 Outfalls = 2

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-moving			Wedge-cutting
Enhancement			Enhancement works
			Sole

T. CHOKED CHANNEL

Is 5% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

V. uniform channel profile + water depth. Substrate gravelly covered with algae + diatoms. Reinforcement at bottom of gorges + under road bridge.

W. SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, incidental sightings)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN 50

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, HARRINGTON, WA4 1HE. TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKS 7-25-5312

9-4901-7L

14-00000

7-9621.76

2

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 913 River: Stone Mid-section grid reference if different from designated site:
Grid Reference: TL 253443
Date: 29.4.1994 Start time: 9.10 Surveyor name: N. Cleave
Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☒ Yes ☐ (tick one box)
Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ asymmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	CC	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	RI	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	SC	SC	NO	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	SA	SI	SI	SI	SI
Predominant flow type (one entry only)	RF	AL	RF	AL	RF	PO	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	RI	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	DA	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	CC	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	RI	RI	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	NO	NO	NO	NO	NO	SC	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	O	C	O	C	C	C	C	C	C
LEFT BANK	S	S	U	U	U	B	C	S	C	C
RIGHT BANK	S	S	U	U	U	B	S	S	B	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	U	S	S	U	NO	U	U	U	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (>33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick all appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or /)

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SWEEP UP OVER 500m ENTER SITE NUMBER: 913

J. LAND USE WITHIN 50m OF RIVER Use E (>33% banklength) or / (present)

	L	R		L	R
Broadleaf/mixed woodland			Bog/marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 95 Right bank: None ☐ Banklength % = 95

L. BANK PROFILES WITHIN 500m Use E (>33% banklength) or / (present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gravels			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade	6			
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

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P. DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	2.5	Bankfull width (m)
Bank height if different (m)	3.5	Water width (m)
Embayed height (m)		Bank height if different (m)
		Embayed height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick 'none' where appropriate

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs (tick boxes)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-moving			Wood-cutting
Enhancement			Enhancement works
			State

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Lowland river - survey reach split into two halves by a weir, shallow water below, slower & deeper upstream

W. SPECIAL FEATURES eg swamps, adjacent habitats of high interest, incidental sightings

Bed along left bank.

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) 14 None of them ☐

Y. TAKEN 1 hr

THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
RS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m ENTER SITE NUMBER 914

LAND USE WITHIN 500m OF RIVER Use E (≥ 33% banklength) or J (if present)

Broadleaf/woodland					
Coniferous plantation					
Moorland/heath					
Scrub/rough pasture					
Bog, marsh, fen					
Improved/semi-improved grass					
Tilled land					
Suburban/urban development					

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 30 Right bank None ☐ Banklength % = 20

BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J (if present)

Natural/unmodified					
Vertical/undercut					
Vertical + toe					
Steep (> 45°)					
Gentle					
Composite					
Artificial/modified					
Revetted					
Reinforced - whole bank					
Reinforced - top only					
Reinforced - toe only					
Artificial in-stage					
Poached					

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 75

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (Tick one box per feature)

Shading of channel					
Overhanging boughs					
Exposed bankside roots					
Underwater tree roots					
Fallen trees					
Woody debris					

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles					
Waterfall/cascade					
Torrential flow (rapids)					
Laminar flow (run/glide)					
Stale flow (slack)					
Exposed bedrock					
Exposed boulders					

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full height (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☐ clastic: fresh clean gravel, easily dislodged, loose ☐ clastic: algae growth compact, stable ☐ unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose ☐ unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT Obvious signs not been

BANKS	CHANNEL
None	None
Revetting	Revetting
Bank-mowing	Bank-mowing
Enhancement	Enhancement

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Lowland channel - spot checks good...
Extensive Imp. grasses for most of area

SPECIAL FEATURES (if obvious, adjacent habitats of high interest, incidental sightings)

Shoreline of Reach & Chub seen

RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐

TIME TAKEN 34 hrs

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 1HR. HELPLINE NUMBERS: PETER FOX 7-21-3120; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Mean Annual Flow category (1-10)

Solid geology Drift geology

Distance from source(km)

FIELD SURVEY DETAILS Complete all questions

Site number 914 River STOUR Mid-section grid reference if different from designated site: L856450

Date 26/4/1994 Start time: 13:20 Surveyor name N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

predominantly culverted ☐

open, but bed or banks predominantly artificial (eg box reinforced) ☐

open, little or no obvious reinforcement, but resectioned and/or realigned ☐

open, but predominantly artificially dug (eg. mill leat, dyke) ☐

not artificial, but dammed ☐

no obvious modification ('semi-natural') ☒

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐

open, but bed or banks predominantly artificial (eg box reinforced) ☐

open, little or no obvious reinforcement, but resectioned and/or realigned ☐

open, but predominantly artificially dug (eg. mill leat, dyke) ☐

not artificial, but dammed ☐

no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐

step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

LEFT BANK	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SI	EP	EP	EP	EP	EP	EP	EP	EP	EP
Predominant flow type (one entry only)	ST	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	SP	CC	CC	CC	CC	CC	CC	CC	CC	CC
- bank modification (one entry only)	RI	RI	RI	RI	RI	RI	RI	RI	RI	RI
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m site width) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	S	U	S	U	S	U	S	U	S
RIGHT BANK	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% area) or J (if present))

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or J)

↑ overflow channel (joins here + dry at present)

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A. BACKGROUND INFORMATION This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 95 River: BOX Mid-section grid reference if different from designated site: _____
 Grid Reference: 7L930430 Start time: 9:20 Surveyor name: N. GRIEVE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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G. TEN SPOT CHECKS (ca 30m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	NO	SC	NO	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S1	S1	S1	S1	EP	OP	CP	EP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	NO	SC	SC	NO	SC	SC	SC

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	U	S	S	U	S	S
RIGHT BANK	S	S	U	S	S	S	S	S	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	S

J. CHANNEL VEGETATION TYPES (fill in yellow boxes with one entry; use S (≥ 10% area) or / (percent))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Upriver/mosses										
Emergent herbs										
Emergent reeds/bushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or I)

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K. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or I (percent)

	L	R		L	R
Bridges/limited woodland	E	E	Bag, marsh, fen		E
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

M. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or I (percent)

	L	R		L	R
Natural/Unmodified			Artificial/Unmodified		
Vertical/undercut		E	Reinforced		
Vertical + toe		E	Reinforced - whole bank		
Step (> 45°)		E	Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial toe-slope		
			Poached		

N. OBSTRUCTIONS (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)		ASSOCIATED FEATURES (tick one box per feature)	
Left	Right	E ≥ 33%	None Present E
None		Shading of channel	
Isolated/scattered		Overhanging boughs	
Regularly spaced, single		Exposed bankside roots	
Occasional clumps		Underwater tree roots	
Small continuous		Fallen trees	
Continuous		Woody debris	

P. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of:	Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade	0	0	0	0	0
Torrential flow (rapids)	0	0	0	0	0
Laminar flow (run/glide)	0	0	0	0	0
Stale flow (slack)	0	0	0	0	0
Exposed bedrock	0	0	0	0	0
Exposed boulders	0	0	0	0	0

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Q. DIMENSIONS AND INFLUENCES

R. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK	
Bank full height (m)	1.3	Bank full width (m)	4.7
Bank height if different (m)	1.8	Bank height if different (m)	1.8
Embankment height (m)		Water depth (m)	2.0
		Embankment height (m)	

Bed material at site is: consolidated ☐ loose: silt/clay growth compact, stable ☐
 unconsolidated ☒ loose: fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ inaccessible or not visible (eg. washed away) ☐

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

S. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

T. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick 'none' where appropriate

None ☒ Culverts = Weirs = Bridges = Outfalls =

U. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Recontouring <input type="checkbox"/>	Drudging <input type="checkbox"/>
Bank-maintenance <input type="checkbox"/>	Wind-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>
	State <input type="checkbox"/>

V. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

W. NOTABLE NUISANCE PLANT SPECIES tick box(es). No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

X. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

Small ditch running through mixed woodland - more gravel towards upper end. Spot checks good.

Y. SPECIAL FEATURES (eg. obstructions, adjacent habitats of high interest, landward sightings)

Extensive area of marsh on left side. Large reed bed pond.

Z. RIVER TYPING Refer to photographs of river type and indicate which resembles the site

Number (1-14) ☐ None of them ☒

AA. TIME TAKEN 1 hr 30 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-3149; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5312

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWIFT-UP OVER 500m ENTER SITE NUMBER 916

LAND USE WITHIN 50m OF RIVER Use E (± 33% banklength) or J if present

Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L BANK PROFILES WITHIN 500m Use E (± 33% banklength) or J if present

Natural/unmodified			Artificial/modified		
Vertical/undercut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

N EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None			E ≥ 33%		
Isolated/scattered			Shading of channel		
Regularly spaced, single			Overhanging boughs		
Occasional clumps			Exposed bankside roots		
Semi-continuous			Underwater tree roots		
Continuous			Fallen trees		
			Woody debris		

O NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of: Riffles = 0 Pools = 0 Unvegetated Point Bars = 0 Vegetated Point Bars = 0					
Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Mature island(s)		
Static flow (slack)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

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PHYSICAL ATTRIBUTES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: ticks, none, where appropriate

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 1

S EVIDENCE OF RECENT MANAGEMENT, Obvious signs: tick box(es)

BANKS	CHANNEL
None	None
Re-sectioning	Dredging
Bank-mowing	Ward-cutting
Enhancement	Enhancement works

T CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Lowland channel with steep banks. Plenty of aquatic veg. Spot checks good.

W SPECIAL FEATURES (eg obvious adjacent habitats of high interest; incidental sightings)

X RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☐ Conf to a depressed 6.

Y TIME TAKEN 1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A BACKGROUND INFORMATION: This information is being collected separately

Altitude(m) Slope Mean Annual Flow category (1-10)

Solid geology Drift geology

Distance from source(km)

B FIELD SURVEY DETAILS: Complete all questions

Site number: 916 River: BEET Mid-section grid reference if different from designated site: TM 024433

Date: 25.5.1994 Start time: 16.30 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C PREDOMINANT VALLEY FORM (tick one box only)

yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank feature(s)	NO	SC	SC	NO	NO	SC	SC	SC	NO	SC

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	U	B	U	B	B	B	U	B	B	B
RIGHT BANK	U	U	C	U	U	U	U	U	U	B
RIGHT RIPARIAN ZONE (if none, enter NO)	C	U	C	S	S	C	S	U	S	S

I CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry: use E (± 33% area) or J (percent))

NONE (tick as appropriate)										
Living water/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or J)

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A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 917 River: Orwell Mid-section grid reference if different from designated site: _____
Grid Reference: TM 149 449
Date: 23.5.1994 Start time: 1305 Surveyor name: BLACKBURN, R. Armitage
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ V-shaped ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whirlwater ☐ riffle-pool ☐ static ☐
step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SP	SP	SP	SP	SP	EA	EA	EA	SP	EA
- bank modification (one entry only)	R1	R1	R1	R1	R1	NO	NO	NO	R1	NO
- bank features(i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Predominant flow type (one entry only)	ST	ST	ST	ST	AL	AL	AL	AL	AL	AL
- channel modification(i)	RR	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	SP	SP	SP	SP	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	R1	R1	R1	R1	R1	NO	NO	NO	R1	NO
- bank features(i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide profile) Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	S	S	S	S	S
LEFT BANK	B	B	B	B	B	S	S	S	S	S
RIGHT BANK	B	B	B	B	B	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	S	S	S	S	S

I. CHANNEL VEGETATION TYPES: (tick in relevant boxes with one entry; tick B for 10% or more of area)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Upriver/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or F)

Phosphorus Colony Nether

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J. LAND USE WITHIN 50m OF RIVER: (tick in relevant boxes with one entry; tick B for 10% or more of area)

	L	R	L	R
Broad/limited woodland				
Coniferous plantation				
Moorland/heath				
Scrub/rough pasture				
Improved/semi-improved grass				
Tilled land				
Schurban/urban development				

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick in relevant boxes with one entry; tick B for 10% or more of area)

Left bank: Name ☐ Banklength % = 55 Right bank: Name ☐ Banklength % = 60

L. BANK PROFILES WITHIN 50m: (tick in relevant boxes with one entry; tick B for 10% or more of area)

	L	R	L	R
Natural/unmodified				
Vertical/steep				
Vertical + toe				
Slope (> 45°)				
Grass				
Composite				
Artificial/unmodified				
Recessed				
Reinforced - whole bank				
Reinforced - top only				
Reinforced - toe only				
Artificial two-stage				
Poached				

M. EMBANKMENTS: (tick in relevant boxes with one entry; tick B for 10% or more of area)

Left bank: Name ☒ Banklength % = _____ Right bank: Name ☒ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

	Left	Right	Left	Right
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered				
Regularly spaced, single				
Occasional clumps				
Semi-continuous				
Continuous				
Shading of channel				
Overhanging boughs				
Exposed bankside roots				
Underwater tree roots				
Fallen trees				
Woody debris				

O. NATURAL CHANNEL FEATURES: (tick one box per feature)

	None	Present	None	Present
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapid)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laminar flow (pool/slide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Static flow (slack)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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P. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m) <u>2.5</u>	Bankfull height (m)
Bank height if different (m)	Water width (m) <u>2.8</u>	Bank height if different (m)
Embank height (m)	Water depth (m) <u>1.4</u>	Embank height (m)

Bed material of site is: consolidated ☐ clastic: algal growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibile or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use only numbers, then totals. Give 'none' where appropriate.

None ☐ Number of Culverts = _____ Weirs = _____ Bridges = 2 Outfalls = _____

S. EVIDENCE OF RECENT MANAGEMENT: (Obvious signs: tick boxes)

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Recessing <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>
	Stake <input type="checkbox"/>

T. CHANNELLED CHANNEL:

Is 33% or more of the channel over 500m chafed or with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE: (Use only spot checks representative of site as a whole)

Course 150m of reach with channelised bed (with stone) and side banks. Vegetation on both sides of channel. No obvious signs of recent management. No obvious signs of recent management. No obvious signs of recent management.

W. SPECIAL FEATURES: (tick in relevant boxes with one entry; tick B for 10% or more of area)

Cast metal gate on weir in emergent Phragmites on right bank

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN: 35 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, RIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-31-2148; PAUL RAYN 7-10-4343; ANDREW BROOKES 7-25-5712

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SWEEP-UP OVER 500m ENTER SITE NUMBER 918

LAND USE WITHIN 500m OF RIVER (tick one box per banklength or % if present)

Broadleaf/limited woodland	L	R	Bog, marsh, fen	L	R
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture	E	E	Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 95

L. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or U if present

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	T	T	Re-sectioned		
Vertical + toe	T	T	Reinforced - whole bank		
Slope (> 45°)	E	E	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Post-holed		

M. EMBANKMENTS (tick one box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	E ≥ 33%
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs
Semi-continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Exposed bankside roots
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots
			Fallen trees
			Woody debris

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

Number of:	Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	None Present E
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input checked="" type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input checked="" type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Artificial	<input checked="" type="checkbox"/>

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PHYSICAL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick 'none' where appropriate)

None	Number of	Culverts =	Weirs =	Bridges =	Outfalls =
------	-----------	------------	---------	-----------	------------

S. EVIDENCE OF RECENT MANAGEMENT (Observe signs: tick box(es))

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Re-sectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			State

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es): No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a whole)

U small stream heavily shaded except at downstream end of reach (see spot check) where the channel was choked with riparian vegetation. There was a "home" made underflow from a garden "pond" at spot check E. Bank plants were dense and varied.

W. SPECIAL FEATURES (eg. obstructions, adjacent habitats of high interest, incidental sightings)

Q Marsh Hares seen circling one side.

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐ only

Y. TIME TAKEN (min) 50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NEA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 2-21-3140; PAUL RAVEN 2-10-4343; ANDREW BROOKES 2-25-5111

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A. BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 918 River: M14 Mid-section grid reference if different from designated site: TM 243 432

Date: 22.15.1994 Start time: 09.50 Surveyor name: J. BLAKE-BURN R. ARMITAGE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vec ☐ concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. TEN SPOT CHECKS (in 50m party)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	CP	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant channel substrate (one entry only)	CP	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	PD	PD	PD
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	RS	NO	NO
- bank feature(s)	NO	NO	NO	SC	PD	SC	NO	NO	NO	NO

I. VEGETATION STRUCTURE (to be assessed over a 10m wide reach: fill in each box with one entry only)

B = base U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	S	C	C	S	S	S	S	S	S
LEFT BANK	S	S	S	S	B	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	C	S	C	C	NO	S	C

J. CHANNEL VEGETATION TYPES (fill in percent cover: tick one box; use E (≥ 33% area) or U (less than 33% area))

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges	E									
Floating-leaved										
Free-floating										
Amphibious	E									
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or U)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source(km) _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 919 River Shott. Mid-section grid reference if different from designated site: TM 515 455
Grid Reference: _____
Date: 27.5.1994 Start time: 11 20 Surveyor name: J. Blackburn R. Ackinick
Are conditions affecting survey? No ☒ Yes ☐ (If yes, state: _____)
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly cultivated ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☒ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

GR: PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (see entry only)	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL:										
Predominant channel substrate (see entry only)	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK:										
Predominant bank material (see entry only)	CA	CA	CA	CA	CA	CA	CA	CA	CA	CA
- bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE: (to be assessed over a 10m wide reach). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if name, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if name, enter NO)	S	S	S	S	S	S	S	S	S	S

VEGETATION TYPES: (to be assessed over a 10m wide reach). Fill in each box with one entry only (E or A).

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Upland/woodland										
Emergent herbs										
Emergent reeds/bulrushes										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

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ENTER SITE NUMBER: 919

LAND USE WITHIN 500m OF RIVER: Use E (to 33% banklength) or A (if present)

	L	R		L	R
Broadleaved woodland	E	E	Dec. marsh, fen		
Coniferous plantation			Improved/badly improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture	E	E	Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE: (tick 'none', but or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m: Use E (to 33% banklength) or A (if present)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/unmodified			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composites			Artificial toe-stage		
			Pitched		

EMBANKMENTS: (tick 'none', but or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

	Left	Right		None	Present	E
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bankside roots			
Occasional clumps			Undercuts tree roots			
Scal-continuous			Fallen trees			
Continuous			Woody debris			

NATURAL CHANNEL FEATURES: (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapid)				
Laminar flow (pool/slide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank full height (m)	Water width (m)	Bank full height (m)
Bank height if different (m)	Water depth (m)	Bank height if different (m)
Bank height if different (m)		Bank height if different (m)

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☒ chest: fresh clay gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m long? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: Use EUY method, then total, tick, none, where appropriate

None	Number	Culverts	Weirs	Bridge	Outfalls

EVIDENCE OF RECENT MANAGEMENT: (Obvious signs: tick box(es))

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Re-sectioning <input type="checkbox"/>	Deadging <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOSEN CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES: (tick box(es), if need be estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site at a whole)

Upper channel - choked with dense emergent plants for 100m. Lower channel - choked with a little emergent vegetation. Strongly eroding banks. No visible point bars. No visible riffles. No visible pools. No visible boulders. No visible debris. No visible woody debris. No visible fallen trees. No visible undercuts. No visible overhanging boughs. No visible exposed bankside roots. No visible shaded channel. No visible waterfalls/cascades. No visible torrential flow. No visible laminar flow. No visible static flow. No visible exposed bedrock. No visible exposed boulders. No visible waterfalls/cascades. No visible torrential flow. No visible laminar flow. No visible static flow. No visible exposed bedrock. No visible exposed boulders.

SPECIAL FEATURES: (tick box(es), if need be estimate abundance)

None ☒

RIVER TYPE: (tick one box)

Number (1-14) ☐ None of them ☒

TIME TAKEN: 55 minutes

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. TELEPHONE NUMBERS: PETER FOX 7-21-3144; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-23-5712

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SWEET-UP OVER 500m

ENTER SITE NUMBER 323

LAND USE WITHIN 50m OF RIVER (tick one box or estimate percentage banklength if present)

	L	R		L	R
Broadleaf/woodland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 40 Right bank None ☐ Banklength % = 95

BANK PROFILES WITHIN 500m (tick one box or estimate percentage banklength if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Resectioned		
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank		
Steep (> 45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only		
Gentle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only		
Composite			Artificial two-steps		
			Poached		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None	Left	Right	ASSOCIATED FEATURES (tick one box per feature)	None	Present	E
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E ≥ 33%	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bank side roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of: Riffles = 11 Pools = 2 Unvegetated Point Bars = 2 Vegetated Point Bars =	None	Present	E	None	Present	E
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laminar flow (pool/glide)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Man-made island(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK			
Bank full height (m)	1.15	Bank full width (m)	11.0	Bank full height (m)	1.15
Bank height if different (m)	2.0	Water width (m)	11.0	Bank height if different (m)	
Embanked height (m)		Water depth (m)	0.15	Embanked height (m)	

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method; then total: tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = 1/2 Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick box(es))

BANKS	L	R	CHANNEL	
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>
			State	

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

V. natural looking despite recent work on both banks - much of left bank being reinforced (road stone) with good growth of vegetation (and trees) on right bank

SPECIAL FEATURES (e.g. obvious adjacent habitats of high interest; incidental sightings)

Deer probably resting in course of rendering stone wall

RIVER TYPING (Refer to photographs of river type and indicate which it resembles the most)

Number (1-14) ☒ None of them ☐

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, HARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4333; ANDREW BROOKES 7-25-5711

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BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Mean Annual Flow category (1-10) Solid geology Drift geology Planform category Distance from source (km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 920 River R. QUAYN Mid-section grid reference if different from Grid Reference: SN 966 368

Date: 11.4.1994 Start time: 11.30 Surveyor name: J. BLACKBURN R. ARMITAGE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

	<input type="checkbox"/> vee
	<input type="checkbox"/> concave/bowl
	<input type="checkbox"/> stepped valley floor (terraced)
	<input type="checkbox"/> symmetrical
	<input checked="" type="checkbox"/> asymmetrical
	<input type="checkbox"/> gorge

PREDOMINANT CHANNEL FORM (tick one box only)

<input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input checked="" type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed
<input type="checkbox"/> no obvious modification ("semi-natural")

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater <input type="checkbox"/>	rifle-pool <input type="checkbox"/>	static <input type="checkbox"/>
step-pool cascade <input type="checkbox"/>	approximately laminar <input type="checkbox"/>	impounded <input type="checkbox"/>

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	G	G	G	G	G	G	G	G	G	G
- bank modification (one entry only)										
- bank feature(s)										
CHANNEL										
Predominant channel substrate (one entry only)										
Predominant flow type (one entry only)										
- channel modification(s)										
- channel feature(s)										
RIGHT BANK										
Predominant bank material (one entry only)										
- bank modification (one entry only)										
- bank feature(s)										

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK										
RIGHT BANK										
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: tick "none" if none or "N/A" if not applicable)

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (one R or S)

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A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
Distance from source(km) Platform category

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 921 River: GRIFFIN Mid-section grid reference if different from designated site:
Grid Reference: SJ 056347

Date: 7/6/1994 Start time: 5:30 Surveyor name: N. GRIFFIN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☒ vee
☐ concave bowl
☐ stepped valley floor (terraced)
☐ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforcement)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill race, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☒ approximately laminar ☐ impounded ☐

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G. TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. VEGETATION STRUCTURE (to be assessed over a 10m wide reach). Fill in each box with one entry only.

E = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

J. CHANNEL VEGETATION TYPES (tick one box only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Upriver/mosses										
Emergent beds										
Emergent reeds/sedges										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or U)

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K. LAND USE WITHIN 50m OF RIVER (use E for 25% or less, S for 25-50%, C for 50-75%, U for 75-100%)

	L	R		L	R
Broad/unimproved woodland	E	E	Bay, marsh, etc		
Continuous plantation			Improved/unimproved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

M. BANK PROFILES WITHIN 50m (tick one box only)

Natural/unmodified L R Artificial/modified L R

Vertical/undercut ☒ ☒ Resectioned ☐ ☐
Vertical + toe ☒ ☒ Reinforced - whole bank ☐ ☐
Steep (> 45°) ☒ ☒ Reinforced - top only ☐ ☐
Graded ☒ ☒ Reinforced - toe only ☐ ☐
Composite ☒ ☒ Artificial two-stage ☐ ☐
Patched ☐ ☐

N. EMBANKMENTS (tick one box only)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None	<input type="checkbox"/>	<input type="checkbox"/>	2-3% of channel	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bank side roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

P. NATURAL CHANNEL FEATURES (tick one box per bank)

	Left	Right		Left	Right
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/slide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input type="checkbox"/>
Static flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input type="checkbox"/>

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Q. CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.5	Bank full width (m)
Bank height if different (m)	1.0	Bank height if different (m)
Embankment height (m)	0.1	Embankment height (m)

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

S. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick none where appropriate)

None	Number	Columns	Wires	Bridges	Outlets
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

T. EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick one box)

BANKS	CHANNEL
None <input type="checkbox"/>	None <input type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank reinforcement <input type="checkbox"/>	Ward-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

U. CHONED CHANNEL

Is 33% or more of the channel over 500m choned with vegetation? NO ☐ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES (tick boxes; tick none to indicate absence)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

W. BRIEF DESCRIPTIVE SENTENCE (Outline if spot checks representative of the site as a whole)

100% of the channel is choned with vegetation. The channel is very narrow and the banks are very steep.

X. SPECIAL FEATURES (tick boxes; tick none to indicate absence)

Good variety of vegetation along the banks.

Y. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

Z. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
TELEPHONE NUMBERS: PETER FOX 7-21-3146; PAUL RAYEN 7-18-434; ANDREW BROOKES 7-25-5712

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SWEET-UP OVER 500m

ENTER SITE NUMBER 922

LAND USE WITHIN 50m OF RIVER (Use E for 33% banklength or U for present)

Broads/woodland	L	R	Boj, marsh, fen	L	R
Coniferous plantation	E	E	Improved/semi-improved grass	E	E
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 150 Right bank None ☐ Banklength % = 20

BANK PROFILES WITHIN 500m (Use E for 33% banklength or U for present)

Natural/unmodified	L	R	Artificial/unmodified	L	R
Vertical/undrained	U	U	Resectioned		
Vertical + toe	U	U	Reinforced - whole bank		
Slope (> 45°)	U	U	Reinforced - top only		
Gentle	U	U	Reinforced - toe only		
Composite	U	U	Artificial two-stage		
			Poached		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None	Left	Right	E ≥ 33%	None	Present
Isolated/scattered			Shading of channel		
Regularly spaced, single			Overhanging boughs		
Occasional clumps			Exposed bankside roots		
Semi-continuous			Underwater tree roots		
Continuous			Fallen trees		
			Woody debris		

ASSOCIATED FEATURES (tick one box per feature)

None	Present
Shading of channel	
Overhanging boughs	
Exposed bankside roots	
Underwater tree roots	
Fallen trees	
Woody debris	

NATURAL CHANNEL FEATURES (Repeat actual number of riffles, pools and point bars)

Number of: Riffles = 12 Pools = 5 Unvegetated Point Bars = 3 Vegetated Point Bars = 0

Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/slide)			Mature island(s)		
Stale flow (back)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
1.0	6.5	1.0
Bank height if different (m)	Water width (m)	Bank height if different (m)
1.3	6.5	1.2
Embankment height (m)	Water depth (m)	Embankment height (m)
	0.1	

Bed material at site is: consolidated ☐ chert: algal growth compact, stable
unconsolidated ☐ chert: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐ (tick one box)

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total tick, none, where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Wood-cutting
Enhancement			Enhancement works
			Stake

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es): No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Wooded, active channel with many nice features. Some clay in banks. Spot checks good.

SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, individual sightings)

RIVER TYING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 9 None of them ☐

TIME TAKEN 1:10

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Solid geology Drift geology Planform category Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 922 River: MYFER Mid-section grid reference if different from designated site: SW144367

Date: 21/6/1994 Start time: 9:00 Surveyor name: D. P. R. E. L. E.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☐ infounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (No V is carried over a 10m wide section. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

RIPARIAN CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry, use E for 33% area or U for present)

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or U)

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A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 923 River: CYCH Mid-section grid reference if different from designated site: _____
Grid Reference: SJ 274565
Date: 27.6.1994 Start time: 14:30 Surveyor name: N. CRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☒ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ slat/c ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	BR	BR	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	R	R	NO	NO	NO
- bank feature(s)	NO	SC	SB	SC	NO	NO	NO	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	CO	CO	GP	GP	CO	CO	CO	GP	CO	CO
Predominant flow type (one entry only)	RF	FL	FL	FL	FL	FL	FL	RF	FL	FL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	RO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	BR	EA	BR	EA	EA	EA	EA	EA
- bank modification (one entry only)	R	NO	R	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry; tick E (≥ 31% cover) or P (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/bedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick E or P)

① + EC including FI

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ENTER SITE NUMBER 923

J. LAND USE WITHIN 50m OF RIVER: (tick E (≥ 31% banklength) or P (present))

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/brough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick, none box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 70

L. BANK PROFILES WITHIN 500m: (tick, none box or estimate percentage banklength if present)

NATURAL/MODIFIED

	L	R		L	R
Vertical/undercut			Artificial/modification		
Vertical + toe			Resectioned		
Steep (> 45°)			Reinforced - whole bank		
Gentle			Reinforced - top only		
Composite			Reinforced - toe only		
			Artificial two-stage		
			Poached		

M. EMBANKMENTS: (tick, none box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = _____ Right bank None ☐ Banklength % = 50

N. PERCENT EXTENT OF TREES AND ASSOCIATED FEATURES:

TREES (tick one box per bank)

	Left	Right		None	Present	E
None			E ≥ 31%			
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bankside roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of	Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade					
Torrential flow (rapids)					
Laminar flow (run/glide)					
Salt flow (slack)					
Exposed bedrock					
Exposed boulders					

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P. CHANNEL DIMENSIONS: To be measured at one site on a straight uniform section, preferably across a riffle

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.2	Bankfull width (m)	3.0
Bank height if different (m)	1.5	Water width (m)	5.5
Embanked height (m)	—	Water depth (m)	0.2

Bed material at site is: consolidated ☐ clast: algal growth compact, stable
unconsolidated ☒ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total; tick 'none' where appropriate

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 2

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs tick box(es)

	L	R	CHANNEL
None			
Resectioning			
Bank-moving			
Enhancement			

T. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? No ☒ Yes ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick box(es); No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE: (indicate if spot checks representative of site as a whole)

Active, well-lined channel. Road running along RHS. Low sinuosity - Spot checks good.

W. SPECIAL FEATURES: eg osiers, adjacent habitats of high interest; incidental sightings

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the best

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN: 1h

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source (km) _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 925 River: TYWELI Mid-section grid reference if different from designated site: _____
 Grid Reference: S3442 359
 Date: 01.06.1994 Start time: 9:30 Surveyor name: N. CRIVEL
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. null feet, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (one entry only)	FE	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	SC	NO	SB	SB	FB	FB	NO	FB
CHANNEL:										
Predominant channel substrate (one entry only)	CO	CO	PP	CO	CO	PP	PP	PP	PP	PP
Predominant flow type (one entry only)	FE	AL	PP	PP	PP	PP	PP	PP	PP	PP
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	RO	RO	PP	PP	PP	PP	PP	PP	PP	PP
RIGHT BANK:										
Predominant bank material (one entry only)	CO	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SB	SC	SC	NO	SC	SC	SC	SC	SC	SC

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	NO	S	S	S	U	NO
LEFT BANK	S	S	S	U	U	B	B	S	U	B
RIGHT BANK	B	U	B	U	B	B	B	U	B	B
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; tick B for 33% cover or more, or C for cover)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A) ☒

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEEP-UP OVER 500m

ENTER SITE NUMBER: 925

LAND USE WITHIN 50m OF RIVER: Use E for 33% banklength or C if present

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 80 Right bank: None ☐ Banklength % = 25

BANK PROFILES WITHIN 500m: Use E for 33% banklength or C if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Sleep (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None			E ≥ 33%		
Isolated/scattered			Shading of channel		
Regularly spaced, single			Overhanging boughs		
Occasional clumps			Exposed bankside roots		
Semi-continuous			Under-size tree roots		
Continuous			Fallen trees		
			Woody debris		

NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

Number of riffles: 11 Pools: 2 Unvegetated Point Bars: 3 Vegetated Point Bars: 3

ASSOCIATED FEATURES (tick one box per feature)

	None	Present		None	Present
Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Minor island(s)		
Static flow (slack)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: To be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.4	Bankfull height (m)
Bank height if different (m)	0.5	Bank height if different (m)
Embanked height (m)	0.2	Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
 unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: tick 'none' where appropriate

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: Obvious signs tick box(es)

BANKS	Channel
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: (tick box(es). No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site or a whole)

Active channel - little silt in upper half, more silt in lower half. Spots of debris.

SPECIAL FEATURES: (tick box(es) if known, adjacent habitats of high interest; incidental sightings)

Native Oak woodland on Left side of channel.

RIVER TYPING: Refer to photographs of river type and indicate which resembles the site

Number (1-14) ☐ None of them ☒

TIME TAKEN: 1.5 hours

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND SIGNED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1TB. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-16-4343; ANDREW BROOKES 7-25-5112

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SWEEP-UP OVER 100m

LAND USE WITHIN 100m OF RIVER, ON E (S 30° heading) or W (U profile)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick 'none', box or estimate percentage, banklength if present)

Left bank None ☐ Banklength % = 75 Right bank None ☐ Banklength % = 85

BANK PROFILES WITHIN 100m, ON E (S 30° heading) or W (U profile)

	L	R		L	R
Natural/unmodified			Artificially modified		
Vertical/handcut			Reinforced		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gullies			Reinforced - toe only		
Composite			Artificial two-stage		
			Perched		

EMBANKMENTS (tick 'none', box or estimate percentage, banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (tick one box per feature)
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bank side roots
Occasional clump	<input type="checkbox"/>	<input type="checkbox"/>	Understorey tree roots
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris

NATURAL CHANNEL FEATURES (Record extent number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	13	2	None	1
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bar	<input type="checkbox"/>
Torrential flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bar	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Stony island(s)	<input type="checkbox"/>
Stale flow (back)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

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CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.0	Bankfull height (m)
Bank height if different (m)	1.5	Bank height if different (m)
Embankment height (m)	—	Embankment height (m)

Bed material of site is: consolidated ☐ chest: slight growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box only, then total, tick 'none', where appropriate)

None ☐ Number of Culverts = 0 Walls = 0 Bridges = 3 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (tick one box only, then total, tick 'none', where appropriate)

BANKS	CHANNEL
None	None
Revegetating	Dredging
Bank-reinforcing	Wood-runs
Enhancement	Enhancement works

CHOICE CHANNEL

Is 33% or more of the channel over 500m checked with vegetation? NO ☐ YES ☐

US NOTABLE NUISANCE PLANT SPECIES (tick one box only, then total, tick 'none', where appropriate)

Giant Hogweed ☒ Himalayan Balsam ☒ Japanese Knotweed ☒ ALL 3!

BRIEF DESCRIPTIVE SENTENCE (Underline if you think representative of site as a whole)

MEDIAN SIZED CHANNEL, with many active features. Most of the RHS bank has artificial reinforcement of some kind.

SPECIAL FEATURES (tick one box only, then total, tick 'none', where appropriate)

RIVER TYING (Refer to photographs of river type and indicate which resembles the site)

Number (1-14) ☐ None of them ☒ Cross between 5 & 6.

TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1TB. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Solid geology Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 924 River NAME: BARGOD Mid-section grid reference if different from designated site:

Date: 8.6.1994 Start time: 9.30 Surveyor name: N. GREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 2m of spot)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	E	E	E	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank features	N	S	C	N	P	E	S	N	S	N
CHANNEL										
Predominant channel substrate (one entry only)	G	P	P	P	P	P	P	P	P	P
Predominant flow type (one entry only)	A	L	L	L	L	L	L	L	L	L
- channel modification	N	N	N	N	N	N	N	N	N	N
- channel features	N	N	N	N	N	N	N	N	N	N
RIGHT BANK										
Predominant bank material (one entry only)	R	R	R	R	R	R	R	R	R	R
- bank modification (one entry only)	R	N	C	R	R	R	R	R	R	R
- bank features	N	S	C	N	N	N	N	N	N	N

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) (fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter ND)	S	C	C	S	N	C	N	C	S	C
LEFT BANK	U	U	S	S	B	S	U	S	U	S
RIGHT BANK	U	U	S	S	B	S	U	S	U	S
RIGHT RIPARIAN ZONE (if none, enter ND)	S	C	C	S	N	C	N	C	S	C

CHANNEL VEGETATION TYPES (tick one box only, then total, tick 'none', where appropriate)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Live-vertebrates										
Emergent herbs										
Emergent rush/hedger										
Flowering dicot										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (see E or I)

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	1.0	Bankfull width (m)	5.5	Bankfull height (m)	1.0
Bank height if different (m)	1.5	Water width (m)	4.0	Bank height if different (m)	2.5
Embedded height (m)	—	Water depth (m)	0.25	Embedded height (m)	—

Bed material at site is: consolidated ☐ close: sial growth compact, stable
 unconsolidated ☒ close: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use dam, method, then total, ditch, none, where appropriate)

Nose ☐ Number of Culverts = 0 Weirs = 0 Bridges = 3 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (Obvious signs not on list)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> Site <input type="checkbox"/>

CHOKED CHANNEL

Is 25% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick boxes) (No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☒ Japanese Knotweed ☒ ALL 3!

BRIEF DESCRIPTIVE SENTENCE (Indicate if you check representative of site as a whole)

Medium sized channel, with many active features. Veget on the left bank was artificial reinforcement of some kind.

SPECIAL FEATURES (eg above, adjacent habitats of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river type and indicate which item best fits the river)

Number (1-14) ☐ None of them ☒ cross between 5 & 6.

TIME TAKEN: 1.2

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS
 TEL: 01925 836100 FAX: 01925 836101 EMAIL: PETER.FOX@NRA.NHS.NHS.NHS

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	PS	EC	SS	NO	SS	NO	VP
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	RF	RF	RF	RF	RF	PO	RS
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	TR	NO	TR	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	RE	RE	RE	SP	GP	GP	GP	GP	GP	GP
- bank modification (one entry only)	RI	NO	NO	RI	RI	RI	NO	NO	NO	RI
- bank feature(s)	NO	SC	SC	NO	NO	NO	PS	PS	PS	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach)

Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	C	C	S	NO	C	NO	C	S	C
LEFT BANK	U	U	S	S	B	S	U	S	U	S
RIGHT BANK	U	U	S	U	S	B	U	S	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	C	C	S	S	S	NO	S	S	S

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B for 5% area or V otherwise)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or S)

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A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10)
Distance from source(km) Planform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 925 River: TYWEL Mid-section grid reference if different from designated site: SN442359
Date: 21.6.1994 Start time: 9.30 Surveyor name: N. GRIFFIN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	FE	EA	EA	CO	EA	SP	DE	EA	SP	DE
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	SC	NO	SB	SB	FB	FB	NO	FB
CHANNEL										
Predominant channel substrate (one entry only)	CO	CP	CP	CO	CO	CP	CP	CP	CO	CO
Predominant flow type (one entry only)	FE	AL	FE	FE	FE	FE	FE	FE	FE	FE
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	RO	RO	PF	RO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CO	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SB	SC	SC	SC	NO	SC	EA	EA	SC	SC

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	U	S	S	U	NO	C
LEFT BANK	S	S	S	U	U	B	B	S	U	B
RIGHT BANK	B	U	B	U	B	B	U	B	U	B
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	C	S	S	NO

I. CHANNEL VEGETATION TYPES (fill in table and boxes with one entry: use B (at 33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae	E	E	E	E	E	E	E	E	E	E

Use end column for overall assessment over 500m (use E or /)

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J. LAND USE WITHIN 50m OF RIVER Use E (at 33% banklength) or / if present

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture	E	E	Suburban/urban development	E	E

K. LINEAR EXTENT OF RIPARIAN ZONE (tick none, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 80 Right bank None ☐ Banklength % = 25

L. BANK PROFILES WITHIN 500m Use E (at 33% banklength) or / if present

	L	R		L	R
Natural/undisturbed			Artificial/modified		
Vertical/undercut	7	7	Resectioned		
Vertical + toe	7	7	Reinforced - whole bank		
Slope (>45°)	7	7	Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. ENBANKMENTS (tick none, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None			Shed of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bank-side roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES Record actual number of riffle, pool and point bars

	Left	Right		Left	Right
Waterfall/cascade			Unvegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Mature island(s)		
Static flow (slack)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

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P. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.4	Bankfull width (m)
Bank height (if different) (m)	0.5	Water width (m)
Embanked height (m)		Bank height (if different) (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ class: algal growth compact, stable
unconsolidated ☒ class: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick 'none' where appropriate

None ☐ Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick box(es)

BANKS	Left	Right	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works
			State

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es). No need to estimate abundance)

Giant Hogweed ☒ Himalayan Bittersweet ☐ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Active channel - 12m C (33%) in upper half, more meandering with 15m E in lower half. Gravel in middle. Spot checks good

W. SPECIAL FEATURES (eg oxbow, adjacent habitats of high interest; incidental sightings)

Native Oak woodland on left side of stream near

X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN 1.5

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKS 7-25-5712

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source(km)

BY FIELD SURVEY DETAILS: Complete all questions

Site number: 749 River T101 Mid-section grid reference if different from designated site: C-761749

Date: 22.1.1994 Start time: 1100 Surveyor name: Paul HAVINE / Jance FLEET

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide cone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	GA	GP	GC	GC	GC	GP	GP	GP	GP	GP
- bank modification (see entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	50	10	10	10	10	30	10	10	10	10
CHANNEL										
Predominant channel substrate (see entry only)	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	10	10	10	10	10	10	10	10	10	10
- channel feature(s)	10	10	10	10	10	10	10	10	10	10
RIGHT BANK										
Predominant bank material (see entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
- bank modification (see entry only)	10	10	10	10	10	10	10	10	10	10
- bank feature(s)	10	10	10	10	10	10	10	10	10	10

Legend: B = bare U = uniform S = simple C = complex Refer to spot-check key

	S	S	S	S	S	S	S	S	S	S
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (to be assessed over 40m width of channel. Fill in each box with one entry only)

Legend: B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C
NONE (tick as appropriate)				
Liverworts/mosses				
Emergent herbs				
Emergent reeds/bushes				
Flowering reeds				
Free-floating				
Amphibious				
Submerged				
Filamentous algae				

The end column for overall assessment over 500m (use E or I)

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ENTER SITE NUMBER 122

LAND USE WITHIN 50m OF RIVER (tick one box only)

	L	R
Broadleaf/deciduous woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Banklength S = 95 Right bank None ☐ Banklength S = 90

RIPE BANK PROFILES WITHIN 100m (tick one box only)

Natural/Unmodified L R Artificial/Unmodified L R

Vertical/bedrock ☒ ☒ Retention ☒ ☒

Vertical + toe ☒ ☒ Reinforced - whole bank ☒ ☒

Step (>45°) ☒ ☒ Reinforced - top only ☒ ☒

Grass ☒ ☒ Reinforced - toe only ☒ ☒

Composite ☒ ☒ Artificial re-staging ☒ ☒

Parished ☒ ☒

EMBANKMENTS (tick one box only)

Left bank None ☒ Banklength S = Right bank None ☒ Banklength S =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES (tick one box per feature)

E 233% ☐ Shedding of channel ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

BARPIAN CHANNEL FEATURES (tick one box per feature)

Number of riffles = 2 Pools = 0 Unvegetated Point Bars = 0 Vegetated Point Bars = 0

Waterfall/cascade ☐ Torrential flow (rapids) ☐ Laminar flow (run/slide) ☐ Shallow flow (shallow) ☐ Exposed bedrock ☐ Exposed boulders ☐

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐ Algal island(s) ☐ Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is: consolidated ☐ loose: algal growth compact, stable ☐
 nonconsolidated ☒ loose: fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ loose: incohesive or not visible (eg turbid water) ☐

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use entry method, then local box 'none' where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 2 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS L R CHANNEL

None ☐ ☐ None ☐ ☐

Reconciling ☐ ☐ Dredging ☐ ☐

Bank-sowing ☐ ☐ Weed-control ☐ ☐

Enhancement ☐ ☐ Enhancement works ☐ ☐

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (define if spot check representative of site at a whole)

Site shallow river with a continuous side bar on right bank bank.

SPECIAL FEATURES (tick one box only)

None ☐

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NW NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-18-4343; ANDREW BROOKES 7-25-5712

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SWEEP-UP OVER 500m: ENTER SITE NUMBER: 037

LAND USE WITHIN 50m OF RIVER: Use E (to 33% banklength) or J if present

Broadleaved woodland	L	R	Bog, marsh, fen	L	R
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land	E	E
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 95

BANK PROFILES WITHIN 500m: Use E (to 33% banklength) or J if present

Natural/Unmodified	L	R	Artificial/Unmodified	L	R
Vertical/undercut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Resectioned	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Slope (> 45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gentle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Composite	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial two-stage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
			Poached	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present E
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of riffles = 0	Pools = 0	Unvegetated Point Bars = 2	Vegetated Point Bars = 0
Waterfall/cascade	<input checked="" type="checkbox"/>	Unvegetated mid-channel bar	<input checked="" type="checkbox"/>
Territorial flow (rapids)	<input type="checkbox"/>	Vegetated mid-channel bar	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stable flow (back)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	Artificial	<input type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ cluses: algal growth compact, stable
unconsolidated ☐ cluses: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use GUY method, then total, tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT: Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

CHOSED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es): No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Low and a slight overhanging type to the left appears to be natural spot respect.

SPECIAL FEATURES (eg adobe, adjacent habitats of high interest, incident sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 15/1 None of them ☐

TIME TAKEN: 3.45

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HB. HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-3712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 937 River: River Ribblesdale Mid-section grid reference if different from designated site: 50652152

Date: 9.1.1994 Start time: 1115 Surveyor name: Paul Fox, Peter Fox, Jane Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide cone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	CL	CL	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	RS	RS	RS	RS	RS	NO	NO	NO	NO	NO
bank feature(s)	NO	NO	NO	NO	NO	SC	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	S1	CL	CL	CL	CL	S1	S1	S1	CL	CL
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	CL	CL	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	RS	NO	RS	RS	NO	NO	NO	NO	NO	NO
bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide area; fill in each box with one entry only)

N = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	U	U	U	S	U	U	U
LEFT BANK	U	U	S	U	U	U	S	U	U	U
RIGHT BANK	U	U	U	U	U	U	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (tick in relevant boxes with one entry only: use E (to 33% area) or J (if present))

NONE (tick as appropriate)

Liverworts/mosses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent herbs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent reeds/sedges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floating-leaved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free-floating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amphibious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Submerged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filamentous algae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Use end column for overall assessment over 500m (use E or J)

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A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source (km)

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 947 River: CCEAT Mid-section grid reference if different from designated site:
Grid Reference: SP647342 ANSE
Date: 14/6/1994 Start time: 9.15 Surveyor name: N. GRIFFIN
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: B. HUTCHINSON
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☒ Yes ☐ (tick one box) (19)
Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg. null leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CL	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NE	NO	NO	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	CP	CP	CP	CP	CP	CP	CP	CP	CP	CP
Predominant flow type (one entry only)	AL	RE	AL	RE	AL	RE	AL	RE	AL	RE
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CL	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	SC	SC	NO	SC	SC	SC	NO	SC

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide zone) Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	C	C
LEFT BANK	S	S	U	U
RIGHT BANK	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry; use E (2-33% area) or V (green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/edges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J. LAND USE WITHIN 500m OF RIVER: Use E (2-33% banklength) or V (green)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick, name, box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m: Use E (2-33% banklength) or V (green)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/unreinforced			Revetment		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Pierced		

M. ENHANCEMENTS: (tick, name, box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES:

TREES: (tick one box per bank)

None ☐ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES: (tick one box per feature)

Shading of channel ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars.

	Number of Riffles	Number of Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapid)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

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P. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embarked height (m)	Water depth (m)	Embarked height (m)

Bed material at site: consolidated ☒ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total (tick 'none' where appropriate)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs (tick boxes)

BANKS: None ☒ Resectioning ☐ Bank-mowing ☐ Enhancement ☐

CHANNEL: None ☒ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ State ☐

T. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick box(es)) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site as a whole)

Lowland channel, former in character with gravel bar side. Some clay at start of survey reach.

W. SPECIAL FEATURES: eg osiers, adjacent habitat of high interest, incidental sightings

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) 15 None of them ☐ bank trees - looks like 5

Y. TIME TAKEN: 1.5 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYN 7-10-0343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET UP OVER 500m

ENTER SITE NUMBER 94

LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or U (present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE: tick "none" box or estimate percentage banklength if present

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

L. BANK PROFILES WITHIN 100m: Use E (≥ 33% banklength) or U (present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS: tick "none" box or estimate percentage banklength if present

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		None	Present	E
None			E ≥ 33%			
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bankside roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	None	Present	None	Present
Wetfall/cascade			Unvegetated mid-channel bars	
Torrential flow (rapids)			Vegetated mid-channel bars	
Laminar flow (run/glide)			Mature island(s)	
Static flow (slack)			Unvegetated side bar	
Exposed bedrock			Vegetated side bar	
Exposed boulders			Artificial	

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	2.0	Bankfull width (m)
Bank height if different (m)		Water width (m)
Embanked height (m)		Water depth (m) ? (U) 1.0
		Embanked height (m)

Bed material at site is: consolidated ☐ clast: algal growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water) - S.W.T.

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use only method, then (tick one box) where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs (tick one box)

BANKS	CHANNEL
None	None
Resectioning	Dredging
Back-mowing	Weed-cutting
Enhancement	Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES: tick box(es) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (Indicate if you check representative of site as a whole)

Lowland channel - uniform & laminar, few trees. No obvious signs of dredging etc. Small checks good.

W. SPECIAL FEATURES: if obvious, adjacent features of high interest, individual features

Craghlin traps every 20m along survey reach.

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the river

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN: hr min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

B. FIELD SURVEY DETAILS: Complete all questions

Site number 943 River GREAT Mid-section grid reference if different from designated site: SP 744 359 ONE

Date 14/6/1994 Start time: 4.00 Surveyor name N. GREVE & B. WATKINSON

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: Left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM: (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	A	B	E	A	E	A	E	A	B
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	S	C	N	O	S	C	S	C	S	C
CHANNEL										
Predominant channel substrate (one entry only)	S	I	S	I	S	I	S	I	S	I
Predominant flow type (one entry only)	M	L	A	L	M	L	A	L	M	L
- channel modification(s)	N	O	N	O	N	O	N	O	N	O
- channel feature(s)	N	O	N	O	N	O	N	O	N	O
RIGHT BANK										
Predominant bank material (one entry only)	E	A	B	E	A	E	A	E	A	B
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	N	O	N	O	N	O	N	O	N	O

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	N	O	N	O	N	O	N	O	N	O
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	A	N	O	N	O	N	O	N	O

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry; use E (≥ 33% area) or U (present))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses										
Emergent barks										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or U)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 949 River: ONZEL Mid-section grid reference if different from designated site: _____
 Grid Reference: SP 883 345
 Date: 15/6/1994 Start time: 9:35 Surveyor name: N. CREVEY & G. HUTCHINSON
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

fall/whitewater ☐ riffle-pool ☐ static ☐
 pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2

G. TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	A	E	A	S	P	E	A	E	A
- bank modification (one entry only)	N	O	N	O	R	I	N	O	N	O
- bank feature(s)	N	O	N	O	S	C	N	O	S	C
CHANNEL										
Predominant channel substrate (one entry only)	C	L	C	S	I	S	I	S	I	S
Predominant flow type (one entry only)	A	L	A	L	A	L	A	L	A	L
- channel modification(s)	N	O	N	O	N	O	N	O	N	O
- channel feature(s)	N	O	N	O	N	O	N	O	N	O
RIGHT BANK										
Predominant bank material (one entry only)	E	A	E	A	S	P	E	A	E	A
- bank modification (one entry only)	N	O	N	O	R	I	N	O	N	O
- bank feature(s)	S	C	N	O	S	C	N	O	S	C

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	N	O	N	O	S	S	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	U	S	S	S	S	U	B	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	U	U	S	U

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E for 33% area or / for percent)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Living or mosses										
Emergent herbs	N	N	N	N	N	N	N	N	N	N
Emergent reeds/sedges	E	E	E	E	E	E	E	E	E	E
Floating-leaved										
Free-floating										
Amphibious										
Submerged	E	E	E	E	E	E	E	E	E	E
Filamentous algae	N	N	N	N	N	N	N	N	N	N

Use end column for overall assessment over 500m (use E or /)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3

K. LAND USE WITHIN 50m OF RIVER (Use E for 33% banklength or / for percent)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/brough pasture	E	E	Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 60 Right bank None ☐ Banklength % = 90

M. BANK PROFILES WITHIN 50m (tick 'none' box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - toe only		
Gentle			Reinforced - two-stage		
Composite			Poached		

N. ENHANCEMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 60 Right bank None ☐ Banklength % = 65

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

P. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (slack)				
Exposed bedrock				
Exposed boulders				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4

Q. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.0	Bank full width (m)
Bank height if different (m)		Water width (m)
Embanked height (m)	3.0	Water depth (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
 unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐ (tick one box)

S. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 3 Outfalls = 2

T. EVIDENCE OF RECENT MANAGEMENT (Obtain signs; tick boxes)

BANKS	Channel
None	None
Resectioning	Dredging
Bank-mowing	Weed-cutting
Enhancement	Enhancement works

U. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☐ Yes ☒

V. NOTABLE NUISANCE PLANT SPECIES (tick boxes; No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

W. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Long and narrow - suburban fringe - mostly semi-enclosed, with artificial lake on right. Re-sectioned (lined) below 70% with enhancement.

X. SPECIAL FEATURES (if observed, adjacent habitats of high interest; incidental sightings)

Woodrat downed!

Y. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Z. TYPE TAKEN h

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-15-5712

950

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m ENTER SITE NUMBER 950

LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or V (present))

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/brough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20 Right bank None ☐ Banklength % = 70

BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or V (present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris

NATURAL CHANNEL FEATURES

Number of riffles = 3	Pools = 0	Unvegetated Point Bars = 0	Vegetated Point Bars = 0	
Tick one box per feature	None Present E	None Present E	None Present E	
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Artificial

950

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.50	Bankfull width (m)
Bank height if different (m)	0.25	Water width (m)
Embanked height (m)		Water depth (m)

Bed material at site is: consolidated ☐ effluent: algal growth compact, stable
unconsolidated ☒ effluent: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☐ Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick boxes)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

CHOSEN CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick boxes; no need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

SMALL STREAM, RELATIVELY OPEN, RIGHT BANK LEFT BANK NATURAL WITH NATURAL TREES AND TREES, TOP AND CHANNEL WIDENED AND CHOKED WITH VEGETATION, LOW FLOW, SIGN OF RENOVATION.

SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 15 None of them ☐

TIME TAKEN 60 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NEA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

950

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 950 River Brough Mid-section grid reference if different from Grid Reference: 2942367

Date: 24/5/1994 Start time: 11:00am Surveyor name: Paul Henville / TORY CARBICK

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 23-24

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

<input type="checkbox"/> vee	<input type="checkbox"/> predominantly culverted
<input type="checkbox"/> concave/bowl	<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input type="checkbox"/> stepped valley floor (terraced)	<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input checked="" type="checkbox"/> symmetrical	<input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke)
<input type="checkbox"/> asymmetrical	<input type="checkbox"/> not artificial, but dammed
<input type="checkbox"/> gorge	<input type="checkbox"/> no obvious modification ("semi-natural")

PREDOMINANT CHANNEL FORM (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater	riffle-pool	static
step-pool cascade	approximately laminar	impounded

950

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (± 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	BR	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	BR	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	Nb	Nb	RI	Nb	Nb	Nb	Nb	Nb	Nb	Nb
- bank feature(s)	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb
CHANNEL	SI	SI	SA	LP	SI	SI	SI	SA	AR	SI
Predominant channel substrate (one entry only)	SI	SI	SA	LP	SI	SI	SI	SA	AR	SI
Predominant flow type (one entry only)	AL	AL	AL	RF	AL	AL	ST	AL	RF	AL
- channel modification(s)	Nb	Nb	CI	Nb	Nb	Nb	Nb	Nb	RI	Nb
- channel feature(s)	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb	TR	Nb
RIGHT BANK	EA	EA	BR	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	BR	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RI	RS	RS	Nb	Nb	RS	RI	RS
- bank feature(s)	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb	Nb

VEGETATION STRUCTURE (to be assessed over a 10m wide transect; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	Nb	Nb	Nb	S	S	S	S	U
LEFT BANK	U	U	Nb	Nb	Nb	S	S	S	S	U
RIGHT BANK	S	S	Nb	Nb	Nb	B	B	S	B	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	Nb	Nb	Nb	U	U	U	U	U

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; tick B (≥ 33% area) or V (Green))

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs	E	E								
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 953 River: Ivel Mid-section grid reference if different from designated site: _____
Date: 23.04.1994 Start time: 14.15 Surveyor name: P. HENVILLE
N. CRISPE
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☒ torrential/whitewater ☐ riffle pool ☐ step pool/cascade ☐ approximately laminar ☐ impounded

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9
LEFT BANK									
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL									
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK									
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9
LEFT RIPARIAN ZONE (if none, enter NO)	IS	C	NO	S	S	S	C	NO	C
LEFT BANK	S	S	S	S	S	S	C	U	S
RIGHT BANK	S	S	S	S	S	S	C	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	NO	NO	NO	NO	NO	S	NO	NO

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or / (present))

	1	2	3	4	5	6	7	8	9
NONE (tick as appropriate)									
Liverworts/mosses									
Emergent herbs									
Emergent reeds/sedges									
Floating-leaved									
Free-floating									
Amphibious									
Submerged									

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ENTER SITE NUMBER 953

J. LAND USE WITHIN 50m OF RIVER (use E (≥ 33% banklength) or / if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 30 Right bank: None ☐ Banklength % = 15

L. BANK PROFILES WITHIN 50m (use E (≥ 33% banklength) or / if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Reinforced		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial re-earings		
			Perched		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None			E 2-33%		
Isolated/scattered			Shading of channel		
Regularly spaced, single			Overhanging boughs		
Occasional clumps			Exposed bankside roots		
Semi-continuous			Underwater tree roots		
Continuous			Fallen trees		
			Woody debris		

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present		None	Present
Number of riffles = <u>0</u>			Unvegetated Point Bars = <u>0</u>		
Waterfall/cascade			Vegetated Point Bars = <u>0</u>		
Terraced flow (rapids)			Unvegetated mid-channel bars		
Laminar flow (run/glide)			Vegetated mid-channel bars		
Stable flow (chuck)			Natural island(s)		
			Unvegetated side bar		

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ENTRANCE AND INFLUENCES

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.25	Bank full width (m)
Bank height if different (m)	0.25	Water width (m)
Embanked height (m)		Water depth (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fish clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total. Tick "none" where appropriate

None ☐ Number of: Culverts = _____ Weirs = _____ Bridges = 2 Outfalls = _____

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick (yes/no)

	Left	Right	Channel
Banks			
Recolonizing			
Bank-eroding			
Enhancement			

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to tick out abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. FREE DESCRIPTIVE SENTENCE (Indicate if spot checks representative of 500m or a whole reach)

Clear flow - slow in type (but not a clay) channel overgrown in many areas with tall grass and other vegetation

W. SPECIAL FEATURES (if others, adjacent habitat of high interest, historical features)

+ Mature fen on left bank / River forms small lake at

X. RIVER TYPING Refer to photographs of other types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

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SWEEP UP OVER 500m ENTER SITE NUMBER **956**

LAND USE WITHIN 500m OF RIVER (W E S N 3/4 banklength) (if present)

	L	R		L	R
Broadleaf/mixed woodland		<input checked="" type="checkbox"/>	Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Strathough pasture			Suburban/urban development		<input checked="" type="checkbox"/>

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **195** Right bank None ☐ Banklength % = **100**

BANK PROFILES WITHIN 500m (W E S N 3/4 banklength) (if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/vertical	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Recessed		
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Step (> 45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gentle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Composite			Artificial re-vegetation		
			Perched		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		Left	Right
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging branches	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Small-contiguous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present		None	Present
Number of Riffles = 8			Unvegetated point bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Torrential flow (rapids)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mature island(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Slack flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
0.9	6.0	0.9
Bank height if different (m)	Water width (m)	Bank height if different (m)
	3.0	1.25
Embanked height (m)	Water depth (m)	Embanked height (m)
	0.15	

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (if fully installed, then total; tick "none" where appropriate)

None ☐ Number of Culverts = **3** Weirs = **1** Bridges = **1** Outfalls = **1**

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

BANKS	CHANNEL
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Revetting <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

North channel over gravelly bed - one row of silted bank, obvious form of reinforcement on left bank below garden - below extensive grassy bank

SPECIAL FEATURES (if present, indicate habitat of fish, birds, invertebrates, etc.)

Kingsfisher swim catfish - fish

RIVER JUMPING (tick box(es) to photographs of river type and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN **50**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WAH 1HE
HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-18-434; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: **956** River: **CAM** Mid-section grid reference if different from designated site: **TL 520 350**

Date: **15/6/1994** Start time: **15:50** Surveyor name: **J. BLACKBURN**
P. HENWELL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorges

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but recessed and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ rap-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (6-8m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within 6m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	SP	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	R1	NO	NO	NO	R1	NO	NO
- bank feature(s)	NO	NO	NO	NO	PB	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	AL	AL	AL	RF	AL	RF	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	TR	NO	TR	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	SC	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over 10m wide zone); fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	NO	S	C	S	S	S	U	S
LEFT BANK	S	S	S	S	S	S	S	S	S	B
RIGHT BANK	S	S	S	S	R	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (in relevant box of right one entry; tick B (2-3% cover) or / (over 3%))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (tick one box)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER **958**

LAND USE WITHIN 500m OF RIVER (Use E (x 33% banklength) or V (if present))

	L	R		L	R
Barren/undisturbed woodland			Dog marsh, etc.		
Coniferous plantation			Improved/semi-improved grass		
Mountain/scrub			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength % = **90** Right bank: None ☐ Banklength % = **70**

BANK PROFILES WITHIN 500m (Use E (x 33% banklength) or V (if present))

	L	R		L	R
Natural/undisturbed			Artificial/modified		
Vertical/handcut			Revetment		
Vertical + toe			Reinforced - bank bank		
Slope (> 45°)			Reinforced - toe only		
Grass			Reinforced - toe only		
Composite			Artificial toe-wings		
			Parade		

EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present	U
Shading of channel			
Overhanging boughs			
Exposed bank-side roots			
Underwater tree roots			
Fallen trees			
Woody debris			

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature				
Waterfall/cascade				
Terraced flow (rapids)				
Laminar flow (run/glide)				
Stale flow (slack)				
Exposed bedrock				
Exposed boulders				

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CHANNEL DIMENSIONS AND INFLUENCES (Use E (x 33% banklength) or V (if present))

CHANNEL DIMENSIONS (to be measured at one site on a straight section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	2.5	Bank full width (m)	9.5
Bank height if different (m)		Water width (m)	7.0
Bank height if different (m)		Bank height if different (m)	2.7
Bank height if different (m)		Bank height if different (m)	
Bank height if different (m)		Bank height if different (m)	

Bank material at site is: consolidated ☒ loose: algal growth compact, rubble ☐
 unconsolidated ☐ loose: fresh (less gravel, easily dislodged, loose) ☐
 unknown ☐ inaccessible or not visible (e.g. buried water) ☐

Location of measurements is: riffle ☐ rise or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only methods that have been used; none = none appropriate)

None ☐ Number of Culverts = **0** Weirs = **1** Bridges = **1** Outfalls = **0**

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick one box)

	L	R	CHANNEL
None			
Revetment			
Bank-moving			
Enhancement			
Enhancement works			
State			

CHANGED CHANNEL

Is 33% or more of the channel over 500m channel with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick boxes) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

SPECIAL FEATURES (e.g. obstructions, artificial structures, etc.)

Pumping Sta. downstream of bridge on left bank

RIVER TYPING (tick in photo right of river type and indicate which variables the site meets)

Number (1-14) **18** None of them ☐

TIME TAKEN **1 hr 15 min**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-0342; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Mean Annual Flow category (1-10)
 Solid geology Drift geology Platform category
 Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: **958** River: **COLNE** Mid-section grid reference if different from designated site:
 Grid Reference: **TL776356**
 Date: **27.5.1994** Sun time: **10:40** Surveyor name: **N. GRIEVE**
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

PREDOMINANT CHANNEL FORM (tick one box only)

	predominantly culverted
	open, but bed or banks predominantly artificial (e.g. bank reinforced)
	open, little or no obvious reinforcement, but resectioned and/or realigned
	open, but predominantly artificially dug (e.g. mill leat, dyke)
	not artificial, but dammed
	no obvious modification ("semi-natural")

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	E	E	E	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N
CHANNEL										
Predominant channel substrate (one entry only)	S	S	S	S	S	S	S	S	S	S
- channel modification(s)	N	N	N	N	N	N	N	N	N	N
- channel feature(s)	N	N	N	N	N	N	N	N	N	N
RIGHT BANK										
Predominant bank material (one entry only)	E	E	E	E	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N

VEGETATION STRUCTURE (to be assessed over a 10m wide reach; fill in each box with one entry only)

S = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	N	S	S	S	U	U	U	U	U	U
LEFT BANK	U	S	U	U	U	S	U	U	S	S
RIGHT BANK	U	U	U	U	S	U	S	S	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	N	N	N	C	S	N

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; S = simple, U = uniform, C = complex, N = none)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Unrooted/monocot										
Emergent herbs										
Emergent reeds/bedges										
Flowering dicots										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

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A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____
 Distance from source(km) _____ Planform category _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 959 River STONOR Mid-section grid reference if different from designated site: _____
 Grid Reference: L880384
 Date: 26/5/1994 Start time: 11:00 Surveyor name: N. CRIEVE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☒ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

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G. TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	FA	CC	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	RI	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	SC	SC	SC	SC	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	RS	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	MI	MI	MI	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	CA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	RS	RS	RS	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	SC	SC	SC	NO

I. VEGETATION STRUCTURE (to be assessed over a 10m wide swath). Fill in each box with one entry only.

D = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	S	S	S
LEFT BANK	S	S	S	B	S	S	S	S	S	S
RIGHT BANK	S	S	S	U	S	S	S	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use 5 (≥ 33% area) or / (green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved				E	E	E			E	E
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

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K. LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or / (green)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		E
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		E

L. LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20 Right bank None ☒ Banklength % = _____

M. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or / (green)

Natural/unmodified

	L	R		L	R
Vertical/undercut			Artificial/modified		
Vertical + toe			Resectioned		
Slope (> 45°)			Reinforced - whole bank		
Gentle			Reinforced - top only		
Composite			Reinforced - toe only		
			Artificial two-stage		
			Poached		

N. EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 30 Right bank None ☐ Banklength % = 85

O. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present		None	Present
Unvegetated Point Bars			Unvegetated mid-channel bars		
Vegetated Point Bars			Vegetated mid-channel bars		
			Mature island(s)		
			Unvegetated side bar		
			Vegetated side bar		
			Artificial		

P. NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars.

	Number of	None	Present		Number of	None	Present
Riffles	0			Unvegetated Point Bars	0		
Pools	0			Vegetated Point Bars	0		
Waterfall/cascade	0			Unvegetated mid-channel bars	0		
Torrential flow (rapids)	0			Vegetated mid-channel bars	0		
Laminar flow (run/glide)	0			Mature island(s)	0		
Static flow (slack)	0			Unvegetated side bar	0		
Exposed bedrock	0			Vegetated side bar	0		
Exposed boulders	0			Artificial	0		

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Q. CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.75	Bankfull width (m)
Bank height if different (m)		Water width (m)
Embanked height (m)	1.75	Water depth (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
 unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
 undown ☐ inaccessible or not visible (eg turbid water) ☒

Location of measurements is: riffle ☒ run of glide ☐ other ☐ (tick one box)

R. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

S. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: tick 'none' where appropriate.

None ☐ Number of: Culverts = 0 Weirs = 1 Bridges = 2 Outfalls = 0

T. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

BANKS	Channel
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>
	State <input type="checkbox"/>

U. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

W. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Lowland clay river - spot checks good. Middle reach different one to island - some logs & embankment

X. SPECIAL FEATURES (eg osiers, adjacent habitat of high interest; incidental sightings)

Mature island with small pond enclosed. Also good bankside veg

Y. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒ Embankment type 6 with wide flood-plain

Z. TIME TAKEN 3/4 h

NOTE: CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HB. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

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SWEEP-UP OVER 500m: ☐ ENTER SITE NUMBER: 960

J. LAND USE WITHIN 50m OF RIVER: Use E (2-33% banklength) or F (if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	E	
Moorland/heath			Tilled land		E
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 75

L. BANK PROFILES WITHIN 500m: Use E (2-33% banklength) or F (if present)

Natural/unmodified

	L	R	Artificial/unmodified	L	R
Vertical/undrained			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None			E ≥ 33%			
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bankside roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Stale flow (slack)				
Exposed bedrock				
Exposed boulders				

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1.0	Bankfull height (m)
Bank height if different (m)		Bank height if different (m)
Embanked height (m)		Embanked height (m)

Bed material at site is: consolidated ☐ clast: algal growth compact, stable
unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ clast: incoarsible or not visible (e.g. turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total; tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs (tick one box)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works

T. CHOSED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick box (s), No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (Underline if spot check representative of site as a whole)

Goodly running, slightly meandering, clay, probably covered with silt and channel side slopes composed of fine silt/clay with growth of vegetation on channel banks.

W. SPECIAL FEATURES: (e.g. islands, adjacent habitats of high interest, incidental findings)

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN: 50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-10-5112

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A. BACKGROUND INFORMATION: This information is being collected separately

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 960 River: STOUR Mid-section grid reference: TL 946335

Date: 25.4.1994 Start time: 17.50 Surveyor name: J. BLACKBURN R. ARMSTRONG

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vec ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (e.g. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch). Fill in each box with one entry only

S = bare U = uniform S = simple C = complex Refer to spot-check key

	S	U	S	C	S	U	S	C	S	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)												
LEFT BANK												
RIGHT BANK												
RIGHT RIPARIAN ZONE (if none, enter NO)												

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (2-33% area) or F (greater))

	B	F	B	F	B	F	B	F	B	F	B	F
NONE (tick as appropriate)												
Liverworts/mosses												
Emergent herbs												
Emergent reeds/sedges												
Floating-leaved												
Free-floating												
Amphibious												
Submerged												
Filamentous algae												

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____
 Distance from source(km) _____ Planform category _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 961 River: STOUR Mid-section grid reference (if different from designated site): 04/34-3
 Date: 25.1.5/1994 Start time: 5.00 Surveyor name: D. CRIDE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

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G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	CC	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RI	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	ST	ST	ST	ST	AL	AL	AL	AL	AL	AL
- channel modification(s)	RS	RS	RS	RS	NO	NO	NO	NO	NO	NO
- channel feature(s)	MI	MI	MI	MI	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide reach). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	S	NO	NO	NO	NO	NO
LEFT BANK	U	S	S	U	S	S	S	S	S	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	C	C	C	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry; use E (> 33% area) or G (green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or G)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

J. LAND USE WITHIN 50m OF RIVER: Use E (> 33% banklength) or G (if present)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	E	E
Moorland/heath			Tilled land		
Scrub/brough pasture			Suburban/urban development	E	

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☐ Banklength % = 55 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m: Use E (> 33% banklength) or G (if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EMBANKMENTS: (tick "none" box or estimate percentage banklength (if present))

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES:

TREES: (Tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES: (Tick one box per feature)

	None	Present	E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars.

	None	Present	E
Waterfall/cascade			
Torrential flow (rapids)			
Laminar flow (run/glide)			
Static flow (slack)			
Exposed bedrock			
Exposed boulders			

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle.

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.75	Bank full width (m)	23.0
Bank height if different (m)		Water width (m)	22.5
Embanked height (m)		Water depth (m)	2.5
		Embanked height (m)	

Bed material at site is: consolidated ☐ clast: algal growth compact, stable
 unconsolidated ☐ clast: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total; tick "none" where appropriate

Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs tick box(es)

	None	Present	E
BANKS			
Resectioning			
Bank-mowing			
Enhancement			
CHANNEL			
Dredging			
Weed-cutting			
Enhancement works			

T. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? No ☒ Yes ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick box(es). No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site as a whole)

Nice lowland river - wide & slow. Spot checks in upper half suggest reach better representations. River split in lower section.

W. SPECIAL FEATURES: eg osiers, adjacent habitats of high interest; incidental sightings; two artificial

Pumping station on left bank.

X. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site.

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN: 1/2 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD PARCLOUGH HOUSE, WARRINGTON, WA4 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 1

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 963 River: Ramsey Mid-section grid reference if different from designated site: 600K
 Grid Reference: TM 235 313
 Date: 26.12.1994 Start time: 1700 Surveyor name: J.A. Blackburn R. A. H. M. H. E.
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

☐ natural/semi-natural ☐ impounded ☐ top pool cascade ☐ approximately January ☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

TEN SPOT CHECKS (see 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- bank feature(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
CHANNEL										
Predominant channel substrate (one entry only)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Predominant flow type (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- channel modification(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- channel feature(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- bank feature(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB

H. VEGETATION STRUCTURE (to be assessed over a 10m wide swath). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	C	S	U	U	U	U	S	S
LEFT BANK	S	S	S	U	U	U	U	U	U	U
RIGHT BANK	B	S	S	S	S	S	S	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	S	S	S	S	C	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or V (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 3

SWEEP-UP OVER 500m ENTER SITE NUMBER 963

J. LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or V if present

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, etc		
Coniferous plantation			Improved/semi-improved grass		
Moorland heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or V if present

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undrained			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-steps		
			Peached		

M. EMBANKMENTS: (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES:

	Left	Right		None	Present	E
TREES (tick one box per bank)			ASSOCIATED FEATURES (tick one box per feature)			
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bank side roots			
Occasional clumps			Underway tree roots			
Semi-continuous			Fallen trees			
Continuous			Woody debris			

O. NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars.

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Waterfall/cascade				
Torrential flow (rapids)				
Laminar flow (run/glide)				
Static flow (dead)				

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. DIMENSIONS AND INFLUENCES:

Q. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.75	Bankfull width (m)
Bank height if different (m)		Water width (m)
Embanked height (m)		Bank height if different (m)
		Embanked height (m)

Bed material at site is: consolidated ☐ clastic: algal growth compact, stable
 unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

R. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

S. NUMBER OF ARTIFICIAL FEATURES: Use latter method, then total; tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

T. EVIDENCE OF RECENT MANAGEMENT: Obvious signs; tick box(es)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Wood-cutting
Enhancement			Enhancement works

U. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

V. NOTABLE NUISANCE PLANT SPECIES: (tick boxes; do not tick if not present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

W. BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site as a whole)

Channel influenced by field drains, stable flow, 2/3 of left bank is riparian zone, almost entirely, phragmites, reeds, sedge, some algal growth on bed, some algal growth on bank.

X. SPECIAL FEATURES: (tick boxes; additional features of high interest, incidental sightings)

batonnet rock beds (lead, masonry, dead boulders)

Y. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site.

Number (1-14) ☐ None of them ☒

Z. TIME TAKEN: 4.5 min

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A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 964 River: R. ALVA Mid-section grid reference if different from designated site: _____
 Date: 8/16/1994 Start time: 14:45 Surveyor name: J. BRACKETT
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORMS (tick one box only)

☐ yes ☒ concave/convex ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ stable ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

G. CHANNEL DIMENSIONS AND INFLUENCES

PHYSICAL CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.5	Bank full width (m) 4.3	Bank full height (m) 0.5
Bank height if different (m) 1.0	Water width (m) 4.0	Bank height if different (m) 1.0
Embankment height (m) 1.0	Water depth (m) 0.5	Embankment height (m) 1.0

Bed material at site is: consolidated ☐ loose ☒ coarse: algal growth compact, stable ☐
 unconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

USING TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only marked, then indicate the nature of any appropriate)

None ☐ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	CHANNEL
None <input type="checkbox"/>	None <input type="checkbox"/>
Re-sectioning <input type="checkbox"/>	Re-sectioning <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Bank-moving <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

Y. CHOSEN CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es); no need to record abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE (indicate if spot check representative of site or a whole reach)

Small stream, low flow, with abundant vegetation on both banks. The channel is choked with Japanese Knotweed and Himalayan Balsam. The water is very turbid.

W. SPECIAL FEATURES (eg. debris, adjacent habitat of high interest, important riparian)

None

X. RIVER JYTING (Refer to photographs of river type and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN 1 hr 5 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYN 7-10-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 964 River: R. ALVA Mid-section grid reference if different from designated site: _____
 Date: 8/16/1994 Start time: 14:45 Surveyor name: J. BRACKETT
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORMS (tick one box only)

☐ yes ☒ concave/convex ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ stable ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. TEN SPOT CHECKS (a 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel width at a 10m site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr
- bank modification (one entry only)	R	R	R	R	R	R	R	R	R	R
- bank feature(s)										
CHANNEL										
Predominant channel substrate (one entry only)	S	S	S	S	S	S	S	S	S	S
Predominant flow type (one entry only)	R	R	R	R	R	R	R	R	R	R
- channel modification(s)										
- channel feature(s)										
RIGHT BANK										
Predominant bank material (one entry only)	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr
- bank modification (one entry only)	R	R	R	R	R	R	R	R	R	R
- bank feature(s)										

I. VEGETATION STRUCTURE (to be assessed over a 10m site width; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

J. CHANNEL VEGETATION TYPES (tick all relevant boxes; use E (2-10) and F (1-10) for percentage)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent sedges/reeds										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The grid columns for overall assessment over 500m (use E or F)

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 3m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	112	112	112	112	112	112	112	112	112	112
- bank feature(s)	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
Predominant flow type (one entry only)	A	A	A	A	A	A	A	A	A	A
- channel modification(s)	112	112	112	112	112	112	112	112	112	112
- channel feature(s)	112	112	112	112	112	112	112	112	112	112
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	GA	GA	GA	GA	GA	GA	GA	GA
- bank modification (one entry only)	112	112	112	112	112	112	112	112	112	112
- bank feature(s)	112	112	112	112	112	112	112	112	112	112
H. VEGETATION STRUCTURE (to be assessed over a 10m wide width) Fill in each box with one entry only										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	S	U	B	B	S	B	B	B	B	B
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
I. CHANNEL VEGETATION TYPES (fill in reference boxes with one entry; use B (2-33% area) or V (green))										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges	V	V	E	E	E	V	E	V	E	E
Floating-leaved										
Firm-floating										
Amphibious	V									
Submerged	V	V								
Filamentous algae	V	V	V							

Use end columns for overall assessment over 500m (use E or V)

29 April 1994

RIVER HABITAT SURVEY: 1994 VERIFICATION

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SWITCH-UP OVER 10m		ENTER SITE NUMBER	
--------------------	--	-------------------	--

J LAND USE WITHIN 50M OF RIVER: Use E (≥ 33% banklength) or U if present.

	L	R		L	R
Broadleaved woodland			Beg. marsh, fen	E	E
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Titled land		
Scrubrough pasture	E	E	Suburban/urban development		

K LINEAR EXTENT OF RIPARIAN ZONE: (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L BANK PROFILES WITHIN 200m: Use E (≥ 33% banklength) or U if present.

Natural/unmodified	L	R	Artificial/modified	L	R
* Vertical/cutcut			* Resectioned		
* Vertical + toe			* Reinforced - whole bank		
* Steep (> 45°)			* Reinforced - top only		
* Gentle			* Reinforced - toe only		
* Composite			* Artificial two-stage		
			* Poached		

M EMBANKMENTS: (tick "none" box or estimate percentage banklength if present).

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

N PERCENT EXTENT OF TREES AND ASSOCIATED FEATURES:

TREES (Tick one box per bank)			ASSOCIATED FEATURES (Tick one box per feature)		
	Left	Right	E ≥ 33%	None	Present E
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Shading of channel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>

O NATURAL CHANNEL FEATURES: Record actual number of riffles, pools and point bars.

Number of: Riffles = <small>(Tick one box per feature)</small>	Pools =		Unvegetated Point Bars =		Vegetated Point Bars =	
	None	Present E	None	Present E	None	Present E
Waterfalls/cascades	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Territorial flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Nature Island(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Artificial	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29 April 1994		RIVER HABITAT SURVEY: 1994 VERIFICATION		Page 4 of 4	
DIMENSIONS AND INFLUENCES					
P. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)					
LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	0.95	Bank full width (m)	2.4	Bank full height (m)	0.95
Bank height if different (m)		Water width (m)	2.4	Bank height if different (m)	
Embanked height (m)		Water depth (m)	0.45	Embanked height (m)	
Bed material at site is: consolidated <input type="checkbox"/> clasts: algal growth compact, stable unconsolidated <input checked="" type="checkbox"/> clasts: fresh clean gravel, easily dislodged, loose unknown <input type="checkbox"/> inaccessible or not visible (eg turbid water)					
Location of measurements is: riffle <input checked="" type="checkbox"/> run or glide <input checked="" type="checkbox"/> other <input type="checkbox"/> (tick one box)					
Q. TRIBUTARIES: (tick one box only)					
Significant tributary within 300m length? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>					
R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate					
None <input checked="" type="checkbox"/>	Number of	Culverts =	Weirs =	Bridges =	Outfalls =
S. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)					
BANKS	L	R	CHANNEL		
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None <input type="checkbox"/>		
Resoddening	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>		
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>		
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> Stone <input type="checkbox"/>		
T. CHOKED CHANNEL					
Is 33% or more of the channel over 500m choked with vegetation? NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>					
U. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance					
Giant Hogweed <input type="checkbox"/>	Himalayan Balsam <input type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>			
V. BRIEF DESCRIPTIVE SENTENCE Indicate if spot checks representative of site as a whole					
Ame. dip with wading profile but with left bank section in dense floodplain meadows "open" to form a rich chalky bank soil check - covered by					
W. SPECIAL FEATURES eg obvious adjacent habitats of high interest; incidental sightings					
Wetland edge with adjacent grassland, Juncus, Typha beyond right bank.					
X. RIVER TYPING Refer to photographs of river types and indicate which resembles the site					
Number (1-14) <input checked="" type="checkbox"/> None of them <input type="checkbox"/>					
Y. TIME TAKEN: 45 min					
CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND SIGNED, THEN RETURN TO: PETER HILL AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HR. INFLUENCE NUMBERS: PETER FOL 7-21-2186; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712					

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J. LAND USE WITHIN 500M OF RIVER Use E (2-33% banklength) or L (if present)

	L	R		L	R
Broadleaf/mixed woodland		<input checked="" type="checkbox"/>	Dog, marsh, fen		
Coniferous plantation	<input checked="" type="checkbox"/>		Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture	<input checked="" type="checkbox"/>		Suburban/urban development		<input checked="" type="checkbox"/>

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 75 Right bank None ☐ Banklength % = 0

L. BANK PROFILES WITHIN 500M Use E (2-33% banklength) or L (if present)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical undercut	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Resectioned		
Vertical + toe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - whole bank		
Slope (>45°)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - top only		
Grass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Reinforced - toe only		
Composite	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial two-stage		
			Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	E ≥ 33%	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Semi-continuous	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	
Continuous	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	

ASSOCIATED FEATURES (Tick one box per feature)

	None	Present	E
Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

O. NATURAL CHANNEL FEATURES Record actual number of riffles, pools, and point bars

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	None <input type="checkbox"/> Present <input checked="" type="checkbox"/>	None <input type="checkbox"/> Present <input checked="" type="checkbox"/>	None <input type="checkbox"/> Present <input checked="" type="checkbox"/>	None <input type="checkbox"/> Present <input checked="" type="checkbox"/>
Waterfall/cascade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input checked="" type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input checked="" type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input checked="" type="checkbox"/>

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A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 966 River: Western Mid-section grid reference if different from Grid Reference: 44 957 252
Date: 2.16.1994 Start time: 0900 Surveyor name: J. Blackburn R. Hammett

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vec
☒ concave/bowl
☐ stepped valley floor (terraced)
☐ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ stage ☐
step-pool cascade ☐ approximately laminar ☒ in-pounded ☐

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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ clast: algal growth compact, stable
unconsolidated ☒ clast: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick "none" where appropriate

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT Obvious signs tick (tick one box)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☐ Yes ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

V. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

Swift flowing with some riffles + one or two constricted bits. Not much bank concrete reinforcement, quite banky, some flow was delayed. No obvious signs of recent management, but the site was altered.

W. SPECIAL FEATURES eg urban, adjacent habitats of high interest, historical significance

Dipnet seen

X. RIVER TYPING Refer to photographs of river type and indicate which resembles the river

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN 1 hr 15 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 47A NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JR. HELPLINE NUMBERS: PETER FOX 7-21-2145; PAUL HAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 5m wide area)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr
- bank modification (one entry only)	U	U	U	U	U	U	U	U	U	U
- bank feature(s)										
CHANNEL										
Predominant channel substrate (one entry only)	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr
Predominant flow type (one entry only)	U	U	U	U	U	U	U	U	U	U
- channel modification(s)										
- channel feature(s)										
RIGHT BANK										
Predominant bank material (one entry only)	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr	Gr
- bank modification (one entry only)	U	U	U	U	U	U	U	U	U	U
- bank feature(s)										

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = base U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	N	N	N	N	N	N	N	N	N	N

I. CHANNEL VEGETATION TYPES (to be assessed over a 10m wide stretch; fill in each box with one entry only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses	<input checked="" type="checkbox"/>									
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or L)

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SWEET UP OVER 500m ENTER SITE NUMBER 36

LAND USE WITHIN 500m OF RIVER Use E (S 10% banklength) or U if present

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m Use E (S 10% banklength) or U if present

Natural/Unmodified	L	R	Artificial/Modified	L	R
Vertical/undercut			Recessed		
Vertical + toe			Reinforced - whole bank		
Slope (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present	E
None	<input type="checkbox"/>	<input type="checkbox"/>	E ≥ 10%	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NATURAL CHANNEL FEATURES Record actual number of riffles, pools and point bars

Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
None	None	None	None
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	0.5	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☒ clasts: silt/clay growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES Use tally method, then total, tick "none" where appropriate

None	Number of	Culverts	Weirs	Bridges	Outfalls

EVIDENCE OF RECENT MANAGEMENT Obvious signs: tick boxes

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Recessing	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Back-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works

CHOICED CHANNEL

Is 33% or more of the channel over 500m checked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick boxes, No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Small stream (step/pool) in steep sided, wood covered channel. Frequent exposed bedrock

SPECIAL FEATURES (eg as above, adjacent habitats of high interest, medicinal lighting)

RIVER TYPING Refer to photographs of river types and indicate which "best" describes the site

Number (1-14) ☐ None of them ☐

TIME TAKEN 1 hr 17 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, HARRINGTON, NAH 11HS
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

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BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Mean Annual Flow category (1-10) Drift geology Platform category

Distance from source(km)

FIELD SURVEY DETAILS Complete all questions

Site number: 968 River T of Grid Reference: SJ 153243 TFF Mid-section grid reference if different from designated site:

Date 7.7.1994 Start time: 11.00 Surveyor name N. CREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photographic general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg box reinforced) ☐
open, little or no obvious reinforcement, but recessed and/or realigned ☐
open, but predominantly artificially dug (eg. mill leat, dyke) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☒

PREDOMINANT CHANNEL FORM (tick one box only)

ves ☒
concave/bowl ☐
stepped valley floor (terraced) ☐
symmetrical ☐
asymmetrical ☐
gorge ☐

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool/tascode ☒ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	SC	LC	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	AP	SE	CO	CO	CO	CO	CO	CO	CO	CO
Predominant flow type (one entry only)	RE	RE	RE	RE	RE	RE	RE	RE	RE	RE
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	SC	LC	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (S 10% banklength) or U if present)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or U)

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A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 969 River: CHIN Mid-section grid reference if different from designated site: _____
 Grid Reference: 226254
 Date: 31.04.94 Start time: 16:30 Surveyor name: N. CRENSHAW
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☒ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but recessed and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whirlwater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each bar before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	A	C	P	E	A	E	A	E	A
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	E	Z	V	P	S	C	E	S	B	N
CHANNEL										
Predominant channel substrate (one entry only)	C	P	A	P	A	P	A	P	A	P
Predominant flow type (one entry only)	R	E	A	L	A	L	R	E	A	L
- channel modification(s)	N	O	N	O	N	O	N	O	N	O
- channel feature(s)	N	O	N	O	N	O	N	O	N	O
RIGHT BANK										
Predominant bank material (one entry only)	E	A	E	A	E	A	E	A	E	A
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	V	P	E	C	S	C	N	O	P	B

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	C	C	S	N	O	N	S	N
LEFT BANK	B	S	S	S	U	C	S	S	S	S
RIGHT BANK	S	U	S	S	S	U	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	C	C	C	C	C	C	C	C

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E (2-33% area) or / (percent))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Upland/lowland										
Emergent herbs	E	N	E	E						
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (see E or /)

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K. SLOPE UP OVER 100m ENTER SITE NUMBER 969

L. LAND USE WITHIN 50m OF RIVER Use E (2-33% banklength) or / (percent)

	L	R		L	R
Broadleaved woodland			Box, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development	<u>20m</u>	

M. LINEAR EXTENT OF RIPARIAN ZONE (tick, name, bar or estimate percentage banklength if percent)

Left bank None ☐ Banklength % = 70 Right bank None ☐ Banklength % = 100

N. BANK PROFILES WITHIN 50m Use E (2-33% banklength) or / (percent)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut	<u>7</u>	<u>7</u>	Recessed		
Vertical + toe	<u>7</u>	<u>7</u>	Reinforced - whole bank		
Steep (> 45°)	<u>7</u>	<u>7</u>	Reinforced - top only		
Gravel	<u>7</u>	<u>7</u>	Reinforced - toe only		
Composite	<u>7</u>	<u>7</u>	Artificial toe/wall		
			Postbed		

O. EMBANKMENTS (tick, name, bar or estimate percentage banklength if percent)

Left bank None ☒ Banklength % = _____ Right bank None ☐ Banklength % = 75

P. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right		None	Present
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging branches	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Small continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Q. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present
Number of riffles = <u>12</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Waterfalls/cascades	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Torrential flow (rapid)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Laminar flow (run/slide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Static flow (back)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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R. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	<u>1.4</u>	Bank full width (m)	<u>3.0</u>
Bank height if different (m)	<u>2.0</u>	Water width (m)	<u>6.5</u>
Embanked height (m)	<u>—</u>	Water depth (m)	<u>0.15</u>
Bank height if different (m)	<u>2.1</u>	Embanked height (m)	<u>—</u>

Bed material at site: consolidated ☐ unconsolidated ☒ coarse: silt/clay growth compact, stable ☐ coarse: fresh clean gravel, easily dislodged, loose ☐ inaccessible or not visible (eg buried + star)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

S. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

T. NUMBER OF ARTIFICIAL FEATURES Use grid method, then tick 'none' where appropriate

	None	Number	Culverts	Walls	Bridges	Outfalls
Number	<input checked="" type="checkbox"/>					

U. EVIDENCE OF RECENT MANAGEMENT (obvious signs: tick boxes)

	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Recessing	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			Stake

V. CHOKE CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

W. NOTABLE NUISANCE PLANT SPECIES (tick boxes). No need to estimate abundance.

Giant Hogweed ☒ Himalayan Balsam ☒ Japanese Knotweed ☐

X. BRIEF DESCRIPTIVE SENTENCE (deduce if spot checks representative of site as a whole)

Wooded, active channel. Road running along point of L. High / steep sided valley. Steep banks.

Y. SPECIAL FEATURES (if known, additional features of high interest: tick boxes)

Z. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) 5 None of them ☐

AA. TIME TAKEN 1hr 30min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. TELEPHONE NUMBERS: PETER FOX 7-31-3144; PAUL RAYEN 7-18-4343; ANDREW BROOKS 7-25-5712

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A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) _____ Slope _____
 Solid geology _____ Drift geology _____
 Distance from source (km) _____ Mean Annual Flow category (1-10) _____
 Planform category _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 926 River: CLYDACH Mid-section grid reference if different from designated site: _____
 Grid Reference: SA 534 335

Date: 9/6/1994 Start time: 11:30 Surveyor name: N. CREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☒ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☐ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforcement)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☒ approximately laminar ☐ impounded ☐

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BE	EA	BE	BE	BE	SE	EA	BE	BE	BE
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	PS	NO	NO	NO	NO	SC	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SE	AP	BE	CO	SE	BE	BO	CO	BE	BE
Predominant flow type (one entry only)	AL	AL	RF	RF	TF	TF	RF	AL	AL	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	PS	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	BE	BE	BE	BE	EA	BE	BE	BE
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	NO	NO	NO	NO	SC	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	U	S	U	U	S	U	U	U
RIGHT BANK	S	U	B	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry: use E (≥ 33% area) or / (present))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Living/woody stems	E	/	E	E	E	E	E	E	E	E
Emergent herbs	/	/	/	/	/	/	/	/	/	/
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or /)

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J. SWEEP-UP OVER 500m: ENTER SITE NUMBER 926

K. LAND USE WITHIN 50m OF RIVER: Use E (≥ 33% banklength) or / if present

	L	R		L	R
Broadleaf/mixed woodland	/		Bog, marsh, fen		/
Coniferous plantation	/		Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/mough pasture			Suburban/urban development		

L. LINEAR EXTENT OF RIPARIAN ZONE: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 0 Right bank: None ☐ Banklength % = 0

M. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or / if present

	L	R		L	R
Natural/unmodified			Artificial/modified		
• Vertical/undercut	/	/	• Resectioned	/	/
• Vertical + toe	/	/	• Reinforced - whole bank	/	/
• Steep (> 45°)	/	/	• Reinforced - top only	/	/
• Gentle	/	/	• Reinforced - toe only	/	/
• Composite	/	/	• Artificial two-stage	/	/
			• Pooched	/	/

N. EMBANKMENTS: (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

O. EXTENT OF TREES AND ASSOCIATED FEATURES: (Tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Continuous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>

P. NATURAL CHANNEL FEATURES: Record actual number of riffle pools and point bars

	None	Present		None	Present
Waterfall/cascade	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mixture islands	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Artificial	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Q. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) <u>2.0</u>	Bank full width (m) <u>9.0</u>	Bank full height (m) <u>2.0</u>
Bank height if different (m) <u>—</u>	Water width (m) <u>3.5</u>	Bank height if different (m) <u>3.5</u>
Embank height (m) <u>—</u>	Water depth (m) <u>0.4</u>	Embank height (m) <u>—</u>

R. Bed material at site is: consolidated ☐ clasts: algal growth compact, stable
 unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

S. Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

T. TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

U. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: tick 'none' where appropriate

None ☒ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

V. EVIDENCE OF RECENT MANAGEMENT: Obvious signs: tick box(es)

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			Stake

W. CHOKED CHANNEL:

Is 33% or more of the channel over 500m choked with vegetation? No ☒ YES ☐

X. NOTABLE NUISANCE PLANT SPECIES: (tick box(es)) No need to estimate abundance

Glant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

Y. BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site as a whole)

Steep valley - wooded - bank cut, straight channel. Step pool cascade. approx 90% bedrock (within) spot check

Z. SPECIAL FEATURES: (eg oxbows, adjacent habitats of high interest; incidental sightings)

Orchids (Dactylorhiza fuchsii)

AA. RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

AB. TIME TAKEN: 1 1/2 hr

AC. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE
 HELPLINE NUMBERS: PETER FOX 7-21-2149; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

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ENTER SITE NUMBER **970**

LAND USE WITHIN 500m OF RIVER (Use E for 10% banklength or L for 10% present)

	L	R		L	R
Deciduous/semi-deciduous woodland			Reed, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **30** Right bank None ☐ Banklength % = **65**

BANK PROFILES WITHIN 500m (Use E for 10% banklength or L for 10% present)

Natural/Unmodified	L	R	Artificial/Modified	L	R
Vertical/horizontal			Reinforced		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Peached		

SITE EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None	Left	Right	E > 10%	None	Present E
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					

ASSOCIATED FEATURES (Tick one box per feature)

None	Present E	None	Present E
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

NATURAL CHANNEL FEATURES (Tick actual number of riffles, pools and point bars)

Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a turn)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	2.0	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ coarsest eluvial growth compact, stable
unconsolidated ☒ coarsest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessibility or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use city method, then total: tick "none" box or appropriate)

None ☐ Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick "none" box or appropriate)

BANKS

None	L	R	CHANNEL
Reinforcing			None
Bank-mowing			Dredging
Enhancement			Wood-casting
			Enhancement works
			State

CHOICED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) or tick "none" box or estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if you check representative of all or a whole)

Tree lined channel, with willows & gales. Also broadleaved. Low diversity. Sparsely wooded.

SPECIAL FEATURES (tick one box or estimate abundance of key features: tick "none" box or appropriate)

Unusually dry for small stream.

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

TIME TAKEN (tick one box)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2149; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5112

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Ditch geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: **970** River: **DIAMOND** Mid-section grid reference if different from designated site: **379269**

Date: **21.6.1994** Sun time: **11.30** Surveyor name: **N. GRIEVE**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

PREDOMINANT CHANNEL FORM (tick one box only)

valley concave/bowl stepped valley floor (terraced) symmetrical asymmetrical gorge

predominantly culverted open, but bed or banks predominantly artificial (eg bar reinforced) open, little or no obvious reinforcement, but sectioned and/or resigned open, but predominantly artificially dug (eg. mill leat, dyke) not artificial, but dammed no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater step-pool cascade riffle-pool step-pool approximately laminar static impounded

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TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be observed across channel within a 3m wide zone)

Fill in each box before moving onto H and I of each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank features(i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
channel modification(i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
channel features(i)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
bank features(i)	SC	NO	FI	SC	FI	SC	FI	SC	FI	SC

VEGETATION STRUCTURE (to be observed over a 3m wide zone; tick "none" box or appropriate)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	NO	NO	NO	NO	NO	NO	NO
LEFT BANK	S	U	U	S	S	S	S	S	S	U
RIGHT BANK	S	U	U	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	S	S	S	NO	NO	NO	C	C

CHANNEL VEGETATION TYPES (tick in relevant both box and entry box (E, S, U, C) or 7 (if none))

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Liverworts/mosses	E	L	L	E	E	E	L	L	L	E
Emergent herbs	L	L	L	L	L	L	L	L	L	L
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end returns for overall assessment over 500m (use E or S)

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A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 971 River: Quila Mid-section grid reference if different from designated site: _____
 Grid Reference: 51419 244
 Date: 3.1.1994 Start time: 1755 Surveyor name: Barry Phyllis James F. C. M.
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar/reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leet, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

turbulent/whirlwater ☐ riffle-pool ☒ static ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

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G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)



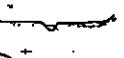
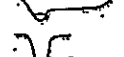

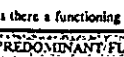
Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GS	SE	CA	EA	CA	BC	CA	EC	FA	CA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	CO	EE	CO	CO	GP	CO	CO	CO	CO	CO
Predominant flow type (one entry only)	AL	RF	AL	AL	AL	RF	AL	RF	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CA	BU	CA	CA	BC	CA	CA	CA	CA	CA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
H. VEGETATION STRUCTURE: (to be assessed over 10m wide reach); Fill in each box with one entry only										
S = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	C	U	S	NO	NO	NO	NO	S	NO	NO
LEFT BANK	S	U	S	S	S	U	U	S	C	S
RIGHT BANK	S	U	S	U	S	S	S	C	S	
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	C	C	C	S	S	S	U	S
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; tick a box if present, tick a box if absent)										
NONE (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent herbs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Emergent reeds/sedges	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Floating-leaved	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Free-floating	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Amphibious	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Submerged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Flowering algae	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Use end column for overall assessment over 500m (use E or A)

[illegible]

29 April 1994 05:55 RIVER HABITAT SURVEY: 1994 VERIFICATION			
A. BACKGROUND INFORMATION: This information is being collected separately.			
Altitude(m) Solid geology Distance from source(km)	Slope Drift geology	Mean Annual Flow category (1-10) Planform category	
B. FIELD SURVEY DETAILS: Complete all questions!			
Site number: 973 River: Wai		Mid-section grid reference if different from designated site:	
Grid Reference: SN 657 239			
Date: 7.1.5/1994	Start time: 0115	Surveyor name: P. H. HERRICK / J. M. FRYER	
Are conditions affecting survey?		No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/> If yes, state _____
Bed of river visible?		No <input type="checkbox"/>	partially <input checked="" type="checkbox"/> entirely <input type="checkbox"/> (tick one box)
Photograph: general character?		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> (tick one box) 3b 1
Photograph of channel measurement site?		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> (tick one box) 3S
Site surveyed from: left bank <input checked="" type="checkbox"/> * right bank <input type="checkbox"/> both banks <input type="checkbox"/> channel <input checked="" type="checkbox"/>			
C. PREDOMINANT VALLEY FORM: (tick one box only)		D. PREDOMINANT CHANNEL FORM: (tick one box only)	
 <input type="checkbox"/> vee  <input type="checkbox"/> concave/bowl  <input type="checkbox"/> stepped valley floor (terraced)  <input checked="" type="checkbox"/> symmetrical  <input type="checkbox"/> asymmetrical  <input type="checkbox"/> gorge		<input type="checkbox"/> predominantly culverted <input type="checkbox"/> open, but bed or banks predominantly artificial (eg bar reinforced) <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input checked="" type="checkbox"/> no obvious modification ("semi-natural")	
E. NAVIGATION (tick one box only)			
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>			
F. PREDOMINANT FLOW TYPE: (tick one box only)			
torrential/whitewater <input type="checkbox"/> riffle-pool <input type="checkbox"/> static <input type="checkbox"/> step-pool cascade <input type="checkbox"/> approximately laminar <input checked="" type="checkbox"/> impounded <input type="checkbox"/>			

29 April 1994
 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ or site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 10m wide zone)

Fill in each bar before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK (if none, enter NO)										
Predominant bank material (one entry only)	EA	EH	CE	EA	EA	ED	EH	EO	EA	EC
- bank modification (one entry only)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- bank feature(s)	NB	SC	EC	VS	NB	NB	NB	SC	NB	S:
CHANNEL										
Predominant channel substrate (one entry only)	CO	EP	GP	EP	EP	GP	GP	NB	GP	GP
Predominant flow type (one entry only)	AL	E:	F:	AL	B:	F:	F:	F:	E:	E:
- channel modification(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- channel feature(s)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
RIGHT BANK										
Predominant bank material (one entry only)	EA	EH	CE	EA	EA	ED	EH	EO	EA	EC
- bank modification (one entry only)	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
- bank feature(s)	EC	NB	NB	NB	NB	E:	E:	NB	NB	NB
H. VEGETATION STRUCTURE (to be assessed over a 10m wide reaches) Fill in each bar with one entry only.										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (If none, enter NO)	L	NB	S:	C	NB	NB	NB	NB	NB	NB
LEFT BANK	U	S	S	S	C	C	S	E	S	S
RIGHT BANK	U	U	U	U	S	S	U	U	S	S
RIGHT RIPARIAN ZONE (If none, enter NO)	U	S	S	U	S	U	S	S	S:	S
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (>1% area) or / (green))										
NONE (tick as appropriate)										
Living roots/mosses	/									
Emergent beds										
Emergent reeds/rudges	/	/	/	/	/	/		/	/	/
Flloating-leaved										
Pere-flouing										
Amphibious										
Submerged	/	/								
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 1002 River: Pincey Mid-section grid reference if different from designated site: _____
 Grid Reference: 7655411
 Date: 2/2/1994 Start time: 9:25 Surveyor name: K. GRIFFIN & M. DEVLIN
 21
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ state ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES: (to be filled out at least 10m wide section)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S2	GP	S1	S2	S1	GP	S1	S1
Predominant flow type (one entry only)	FL	FL	FL	FL	FL	FL	FL	FL	FL	FL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	TR	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be filled out at least 10m wide section)

Use end column for overall assessment over 50m (use E or V)

	B = bare	U = uniform	S = simple	C = complex	Refer to spot-check key
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	U	S	S
LEFT BANK	S	U	U	U	S
RIGHT BANK	U	U	U	U	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	S	S	S

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry only)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a channel)

	Left Bank	Channel	Right Bank
Bank height (m)	1.1	1.1	1.1
Bank width (m)	1.1	1.1	1.1
Bank height if different (m)	1.1	1.1	1.1
Bank width if different (m)	1.1	1.1	1.1
Bank height (m)	1.1	1.1	1.1
Bank width (m)	1.1	1.1	1.1

2. CHANNEL CHARACTERISTICS: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

3. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

4. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

5. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

6. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

7. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

8. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

9. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

10. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER: 1002

1. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

2. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

3. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

4. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

5. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

6. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

7. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

8. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

9. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

10. CHANNEL VEGETATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

30 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1003 River CHANNEL Mid-section grid reference if different from designated site: _____
Grid Reference: TL 6LS 235- _____
Date 22.1.1994 Start time: 12.25 Surveyor name Paul HENNING (Buckingham)

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

D. PREDOMINANT CHANNEL FORM (tick one box only)

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

G. CHANNEL VEGETATION TYPES (fill in each box with one entry only)

None (tick as appropriate)

Upland/mountain ☐
Emergent herbaceous ☐
Emergent reedbed ☐
Flowering ☐
Free-floating ☐
Amphibious ☐
Submerged ☐
Filamentous algae ☐
Vegetation ☐
Flow ☐

30 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

G. CHANNEL VEGETATION TYPES (fill in each box with one entry only)

None (tick as appropriate)

Upland/mountain ☐
Emergent herbaceous ☐
Emergent reedbed ☐
Flowering ☐
Free-floating ☐
Amphibious ☐
Submerged ☐
Filamentous algae ☐
Vegetation ☐
Flow ☐

H. VEGETATION STRUCTURE (to be entered over a 10m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if name, enter NO)

LEFT BANK ☐ B ☐ S ☐ U ☐ S ☐ U ☐ S ☐ U ☐ C ☐ U

RIGHT BANK ☐ S ☐ S ☐ B ☐ S ☐ U ☐ S ☐ U ☐ S

RIGHT RIPARIAN ZONE (if name, enter NO)

☐ S ☐ S ☐ S ☐ S ☐ S ☐ U ☐ U ☐ S ☐ S ☐ U

I. CHANNEL VEGETATION TYPES (fill in each box with one entry only)

None (tick as appropriate)

Upland/mountain ☐
Emergent herbaceous ☐
Emergent reedbed ☐
Flowering ☐
Free-floating ☐
Amphibious ☐
Submerged ☐
Filamentous algae ☐
Vegetation ☐
Flow ☐

J. LAND USE WITHIN 500m OF RIVER (if 100% built up, enter 100%)

K. LINEAR EXTENT OF RIPARIAN ZONE (if 100% built up, enter 100%)

L. BANK PROFILES WITHIN 500m OF RIVER (if 100% built up, enter 100%)

M. EXPLANATIONS (tick one box per bank)

N. EXTENT OF TREES & ASSOCIATED FEATURES (tick one box per bank)

O. NATURAL CHANNEL FEATURES (tick one box per bank)

P. ASSOCIATED FEATURES (tick one box per bank)

Q. NATURAL CHANNEL FEATURES (tick one box per bank)

R. ASSOCIATED FEATURES (tick one box per bank)

S. NATURAL CHANNEL FEATURES (tick one box per bank)

T. ASSOCIATED FEATURES (tick one box per bank)

U. NATURAL CHANNEL FEATURES (tick one box per bank)

V. ASSOCIATED FEATURES (tick one box per bank)

W. NATURAL CHANNEL FEATURES (tick one box per bank)

X. ASSOCIATED FEATURES (tick one box per bank)

Y. NATURAL CHANNEL FEATURES (tick one box per bank)

Z. ASSOCIATED FEATURES (tick one box per bank)

30 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

G. CHANNEL VEGETATION TYPES (fill in each box with one entry only)

None (tick as appropriate)

Upland/mountain ☐
Emergent herbaceous ☐
Emergent reedbed ☐
Flowering ☐
Free-floating ☐
Amphibious ☐
Submerged ☐
Filamentous algae ☐
Vegetation ☐
Flow ☐

H. VEGETATION STRUCTURE (to be entered over a 10m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if name, enter NO)

LEFT BANK ☐ B ☐ S ☐ U ☐ S ☐ U ☐ S ☐ U ☐ C ☐ U

RIGHT BANK ☐ S ☐ S ☐ B ☐ S ☐ U ☐ S ☐ U ☐ S

RIGHT RIPARIAN ZONE (if name, enter NO)

☐ S ☐ S ☐ S ☐ S ☐ S ☐ U ☐ U ☐ S ☐ S ☐ U

I. CHANNEL VEGETATION TYPES (fill in each box with one entry only)

None (tick as appropriate)

Upland/mountain ☐
Emergent herbaceous ☐
Emergent reedbed ☐
Flowering ☐
Free-floating ☐
Amphibious ☐
Submerged ☐
Filamentous algae ☐
Vegetation ☐
Flow ☐

J. LAND USE WITHIN 500m OF RIVER (if 100% built up, enter 100%)

K. LINEAR EXTENT OF RIPARIAN ZONE (if 100% built up, enter 100%)

L. BANK PROFILES WITHIN 500m OF RIVER (if 100% built up, enter 100%)

M. EXPLANATIONS (tick one box per bank)

N. EXTENT OF TREES & ASSOCIATED FEATURES (tick one box per bank)

O. NATURAL CHANNEL FEATURES (tick one box per bank)

P. ASSOCIATED FEATURES (tick one box per bank)

Q. NATURAL CHANNEL FEATURES (tick one box per bank)

R. ASSOCIATED FEATURES (tick one box per bank)

S. NATURAL CHANNEL FEATURES (tick one box per bank)

T. ASSOCIATED FEATURES (tick one box per bank)

U. NATURAL CHANNEL FEATURES (tick one box per bank)

V. ASSOCIATED FEATURES (tick one box per bank)

W. NATURAL CHANNEL FEATURES (tick one box per bank)

X. ASSOCIATED FEATURES (tick one box per bank)

Y. NATURAL CHANNEL FEATURES (tick one box per bank)

Z. ASSOCIATED FEATURES (tick one box per bank)

19 April 1991 **RIVER HABITAT SURVEY 1991 VERIFICATION**

TEN SPOT CHECKS (at 20m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ or site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width @ 0.1m wide spot)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	N	O	N	O	N	O	N	O	N	O
Predominant bank material (one every only)	EA	EA	EA	EA	EA	NK	NK	EA	EA	EA
- bank modification (one every only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	SC	NO	NO	NO	NO	NO	NO	NO
CHANNEL	C	L	M	V	N	V	N	V	N	V
Predominant channel substrate (one every only)	CL	MV	NV	NV	VV	NV	NV	NV	NV	NV
Predominant flow type (one every only)	AL	AL	AL	PD	PD	PD	PD	PD	PD	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	N	O	N	O	N	O	N	O	N	O
Predominant bank material (one every only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one every only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SC	NO	SC	NO	NO	NO	NO	NO	NO	NO
II. VEGETATION STRUCTURE (to be assessed once per site; note changes from last visit; tick one every only)	B = bare	U = uniform	S = simple	C = complex	Refer to spot-check key					
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	C	S	S
LEFT BANK	S	S	S	U	S	S	U	U	S	U
RIGHT BANK	S	S	S	S	S	U	S	S	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	U	S	S	S	S
III. CHANNEL VEGETATION TYPES (fill in relevant boxes with one, two, three, four, five, six, seven, eight, nine, ten)	NONE (tick as appropriate)									
Living roots/stems										
Emergent herbs floating										
Emergent reeds/rushes/papyrus										
Flowering plants										
Ferns/leafing										
Amblyops										
Submerged										
Filamentous algae										

Use end returns for overall assessment every 500m (one E or O)

[illegible]

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 2

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1008 River: RAMSEY Mid-section grid reference if different from designated site: _____
 Grid Reference: TM 185 185
 Date: 26/5/1994 Start time: 1530 Surveyor name: J. BURCHAMEN R. ARMITAGE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ turbulent ☐ transitional ☐ laminar ☒ impounded

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SA	CL	SA	GP	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	ST
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	TR	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	CC	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	RI	NO	NO	NO	NO	NO
- bank feature(s)	SC	SC	NO	SC	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide zone) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	C	S
LEFT BANK	B	S	S	S
RIGHT BANK	D	S	B	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	S	C

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only use E (0-33% area) or P (greater))

	E	P
NONE (tick as appropriate)		
Liverworts/mosses		
Emergent herbs		
Emergent reeds/rushes		
Floating-leaved		
Free-floating		
Amphibious		
Submerged		

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CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across 100m)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.25	3.9	3.9
Bank height if different (m)			
Bank full width (m)		1.25	
Bank height if different (m)			
Water depth (m)		2.4	
Water width (m)		0.1	
Embarked height (m)			

EVIDENCE OF RECENT MANAGEMENT (check appropriate)

Number of artificial features (the only method with which bank 'none' where appropriate)

Significant tributary within 500m (length)? No ☒ Yes ☐

CHANNEL CHANGES (check appropriate)

Bank movement: ☐ None ☐ Erosion ☐ Deposition ☐ Accretion ☐ Other ☐

Channel width: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel depth: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel bed: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel banks: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel vegetation: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel structure: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel flow: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel sediment: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel erosion: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel deposition: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel stability: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

Channel management: ☐ None ☐ Increased ☐ Decreased ☐ Other ☐

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LAND USE WITHIN 500m OF RIVER (tick appropriate)

Land use: ☐ None ☐ Agriculture ☐ Industry ☐ Residential ☐ Commercial ☐ Other ☐

LINEAR EXTENT OF RIPARIAN ZONE (tick appropriate)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

ASSOCIATED FEATURES (tick one box per feature)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

EMERGENCY FEATURES (tick appropriate)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

NATURAL CHANNEL FEATURES (tick appropriate)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

ASSOCIATED FEATURES (tick one box per feature)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

EMERGENCY FEATURES (tick appropriate)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

NATURAL CHANNEL FEATURES (tick appropriate)

Left bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

Right bank: ☐ None ☐ Bank length 5 = 100 ☐ Bank length 5 = 100 ☐ Bank length 5 = 100

RIVER HABITAT SURVEY, 1994 VERIFICATION

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A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1009 River Unknown Mid-section grid reference if different from
Grid Reference: SM 865 147 designated site: SM 866 149

Date 4.1.6.1994 Start time: 09 10 Surveyor name: J. Blackman
R. ADMIRAGE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☒ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill tear, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

RIVER HABITAT SURVEY, 1994 VERIFICATION

29 April 1994

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G. TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BC	EA	BC	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	SB	SC	NO	SC	SC	NO	SC	NO	SC	SC
CHANNEL										
Predominant channel substrate (one entry only)	CO	CO	GP	GP	CO	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	RI	AL	AL	AL	RI	PO	RI	RI
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	RO	RO	NO	RO	NO	MB	NO	NO	RO
RIGHT BANK										
Predominant bank material (one entry only)	BE	BC	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	PB	NO	NO	NO	SC	NO	PB	SC

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	U	S	U	U	B	S	R	S	S	P
RIGHT BANK	U	U	S	S	S	S	S	B	S	B
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

J. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E or S if 2-3% area or 1% (green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or S)

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A. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	1.70	Bankfull width (m)	6.00	Bankfull height (m)	1.70
Bank height if different (m)	1.70	Water width (m)	2.00	Bank height if different (m)	1.70
Embankment height (m)	—	Water depth (m)	0.07	Embankment height (m)	—

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

B. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 3

C. EVIDENCE OF RECENT MANAGEMENT Obtain sign; tick boxes

BANKS		CHANNEL	
None	<input checked="" type="checkbox"/>	None	<input checked="" type="checkbox"/>
Retrenching	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

D. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

E. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

F. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Shaded channel, mostly covered from after destruction of trees, with little to sudden floods due to runoff from nearby forest & moorland.

G. SPECIAL FEATURES (eg obvious adjacent habitat of high interest; incidental sightings)

H. Other immediate factors affecting site

I. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

J. TIME TAKEN 1 hour (1/2 hr with former)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA14 1HS. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1014 River Gyrn Mid-section grid reference if different from designated site: S4321173

Date: 19.4.1994 Start time: 0905 Surveyor name: P. Fox, J. R. Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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A. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	1.70	Bankfull width (m)	6.00	Bankfull height (m)	1.70
Bank height if different (m)	1.70	Water width (m)	2.00	Bank height if different (m)	1.70
Embankment height (m)	—	Water depth (m)	0.07	Embankment height (m)	—

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

B. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 3

C. EVIDENCE OF RECENT MANAGEMENT Obtain sign; tick boxes

BANKS		CHANNEL	
None	<input checked="" type="checkbox"/>	None	<input checked="" type="checkbox"/>
Retrenching	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

D. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

E. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

F. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Shaded channel, mostly covered from after destruction of trees, with little to sudden floods due to runoff from nearby forest & moorland.

G. SPECIAL FEATURES (eg obvious adjacent habitat of high interest; incidental sightings)

H. Other immediate factors affecting site

I. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

J. TIME TAKEN 1 hour (1/2 hr with former)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA14 1HS. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5112

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A. CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	1.70	Bankfull width (m)	6.00	Bankfull height (m)	1.70
Bank height if different (m)	1.70	Water width (m)	2.00	Bank height if different (m)	1.70
Embankment height (m)	—	Water depth (m)	0.07	Embankment height (m)	—

Bed material at site is: consolidated ☒ clasts: algal growth compact, stable
unconsolidated ☐ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

B. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 3

C. EVIDENCE OF RECENT MANAGEMENT Obtain sign; tick boxes

BANKS		CHANNEL	
None	<input checked="" type="checkbox"/>	None	<input checked="" type="checkbox"/>
Retrenching	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

D. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

E. NOTABLE NUISANCE PLANT SPECIES (tick boxes) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

F. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Shaded channel, mostly covered from after destruction of trees, with little to sudden floods due to runoff from nearby forest & moorland.

G. SPECIAL FEATURES (eg obvious adjacent habitat of high interest; incidental sightings)

H. Other immediate factors affecting site

I. RIVER TYPING Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☐ None of them ☒

J. TIME TAKEN 1 hour (1/2 hr with former)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA14 1HS. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK: Bank full height (m) 1.5m, Bank height if different (m) 1.5m, Embankment height (m) 0.5m

CHANNEL: Bank full width (m) 16.7m, Water width (m) 7.2m, Water depth (m) 0.5m

RIGHT BANK: Bank full height (m) 1.3m, Bank height if different (m) 0.5m, Embankment height (m) 0.5m

Bed material at site is: consolidated ☒, chest: algal growth compact, stable ☒; chest: fresh clean gravel, easily dislodged, loose ☒; chest: inaccessible or not visible (eg turbid water) ☒

Location of measurements is: riffle ☒, run or glide ☐, other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total tick none where appropriate

None ☒ Number of Culverts = 0, Weirs = 0, Bridges = 0, Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: Banks: None ☒, Reseeding ☐, Bank-moving ☐, Enhancement ☐; Channel: None ☒, Dredging ☐, Weed-cutting ☐, Enhancement works ☐; State ☐

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: tick box (a) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: Under 100m check representative of site (a) No need to estimate abundance

Gravelly meandering stream minimal bank erosion. Appears to be a good habitat for water.

SPECIAL FEATURES: tick box (a) No need to estimate abundance

Badger sett on right bank

RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

TIME TAKEN: 40 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-10-0343; ANDREW BROOKES 7-15-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SECTION 2: PHYSICAL ATTRIBUTES

Fill in each box before moving onto H and I of each spot check. Use abbreviations in spot-check key

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

TEN SPOT CHECKS (ca 50m apart)

LEFT BANK: Bank full height (m) 1.5m, Bank height if different (m) 1.5m, Embankment height (m) 0.5m

CHANNEL: Bank full width (m) 16.7m, Water width (m) 7.2m, Water depth (m) 0.5m

RIGHT BANK: Bank full height (m) 1.3m, Bank height if different (m) 0.5m, Embankment height (m) 0.5m

Bed material at site is: consolidated ☒, chest: algal growth compact, stable ☒; chest: fresh clean gravel, easily dislodged, loose ☒; chest: inaccessible or not visible (eg turbid water) ☒

Location of measurements is: riffle ☒, run or glide ☐, other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total tick none where appropriate

None ☒ Number of Culverts = 0, Weirs = 0, Bridges = 0, Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: Banks: None ☒, Reseeding ☐, Bank-moving ☐, Enhancement ☐; Channel: None ☒, Dredging ☐, Weed-cutting ☐, Enhancement works ☐; State ☐

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: tick box (a) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: Under 100m check representative of site (a) No need to estimate abundance

Gravelly meandering stream minimal bank erosion. Appears to be a good habitat for water.

SPECIAL FEATURES: tick box (a) No need to estimate abundance

Badger sett on right bank

RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

TIME TAKEN: 40 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-10-0343; ANDREW BROOKES 7-15-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SECTION 3: CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK: Bank full height (m) 1.5m, Bank height if different (m) 1.5m, Embankment height (m) 0.5m

CHANNEL: Bank full width (m) 16.7m, Water width (m) 7.2m, Water depth (m) 0.5m

RIGHT BANK: Bank full height (m) 1.3m, Bank height if different (m) 0.5m, Embankment height (m) 0.5m

Bed material at site is: consolidated ☒, chest: algal growth compact, stable ☒; chest: fresh clean gravel, easily dislodged, loose ☒; chest: inaccessible or not visible (eg turbid water) ☒

Location of measurements is: riffle ☒, run or glide ☐, other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total tick none where appropriate

None ☒ Number of Culverts = 0, Weirs = 0, Bridges = 0, Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: Banks: None ☒, Reseeding ☐, Bank-moving ☐, Enhancement ☐; Channel: None ☒, Dredging ☐, Weed-cutting ☐, Enhancement works ☐; State ☐

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: tick box (a) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: Under 100m check representative of site (a) No need to estimate abundance

Gravelly meandering stream minimal bank erosion. Appears to be a good habitat for water.

SPECIAL FEATURES: tick box (a) No need to estimate abundance

Badger sett on right bank

RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

TIME TAKEN: 40 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-10-0343; ANDREW BROOKES 7-15-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SECTION 4: CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK: Bank full height (m) 1.5m, Bank height if different (m) 1.5m, Embankment height (m) 0.5m

CHANNEL: Bank full width (m) 16.7m, Water width (m) 7.2m, Water depth (m) 0.5m

RIGHT BANK: Bank full height (m) 1.3m, Bank height if different (m) 0.5m, Embankment height (m) 0.5m

Bed material at site is: consolidated ☒, chest: algal growth compact, stable ☒; chest: fresh clean gravel, easily dislodged, loose ☒; chest: inaccessible or not visible (eg turbid water) ☒

Location of measurements is: riffle ☒, run or glide ☐, other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total tick none where appropriate

None ☒ Number of Culverts = 0, Weirs = 0, Bridges = 0, Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: Banks: None ☒, Reseeding ☐, Bank-moving ☐, Enhancement ☐; Channel: None ☒, Dredging ☐, Weed-cutting ☐, Enhancement works ☐; State ☐

CHOKED CHANNEL: Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: tick box (a) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: Under 100m check representative of site (a) No need to estimate abundance

Gravelly meandering stream minimal bank erosion. Appears to be a good habitat for water.

SPECIAL FEATURES: tick box (a) No need to estimate abundance

Badger sett on right bank

RIVER TYPING: Refer to photographs of river types and indicate which resembles the site

Number (1-14) ☒ None of them ☐

TIME TAKEN: 40 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-10-0343; ANDREW BROOKES 7-15-5711

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 101C

LAND USE WITHIN 500M OF RIVER

Grassland/woodland	L	R	Bag, marsh, fen	L	R
Coniferous plantation			Improved/unimproved grass	E	E
Woodland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE

Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % = 10

BANK PROFILES WITHIN 500M

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undrained			Reinforced		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - toe only		
Grass			Reinforced - toe only		
Composites			Artificial toe/ridge		
			Parade		

EMBANKMENTS

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)	Left	Right	ASSOCIATED FEATURES (Tick one box per feature)	None	Present
None	<input type="checkbox"/>	<input type="checkbox"/>	E > 25%	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
			Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES

Number of riffles = 3	Point = 2	Unvegetated Point Bars = 0	Vegetated Point Bars = 0
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toroidal flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laminar flow (run/glide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stale flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Bed material at site is:

consolidated ☒ chest silt/clay growth compact, stable

unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessibles or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☒ other ☐ (tick one box)

OBVIOUS OBSTACLES

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES

None ☐ Number of Culverts = 113 Weirs = 14 Bridges = 10 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT

BANKS	L	R	CHANNEL
None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None
Reinforcing	<input type="checkbox"/>	<input type="checkbox"/>	Dredging
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-casting
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works
			Stake

CHOKED CHANNEL

Is 35% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE

Spills reflect the site history surrounding stream flow, showing land use changes, forest, and water quality.

SPECIAL FEATURES

RIVER TYPING

Number (1-14) 8 Name of them

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 1NE. HELPLINE NUMBERS: PETER FOX 7-31-2149; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-35-5112

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

PHYSICAL ATTRIBUTES

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

TEN SPOT CHECKS (ca 50m apart)

Fill in each box before moving onto it and a tick spot check. Use observations in spot-check box

LEFT BANK	RIGHT BANK	CHANNEL
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10

VEGETATION/STRUCTURE

Left bank: 100% grass, 0% trees, 0% shrubs, 0% bare, 0% water, 0% steep, 0% rocky, 0% other

Right bank: 100% grass, 0% trees, 0% shrubs, 0% bare, 0% water, 0% steep, 0% rocky, 0% other

Channel: 100% grass, 0% trees, 0% shrubs, 0% bare, 0% water, 0% steep, 0% rocky, 0% other

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

PHYSICAL ATTRIBUTES

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

TEN SPOT CHECKS (ca 50m apart)

Fill in each box before moving onto it and a tick spot check. Use observations in spot-check box

LEFT BANK	RIGHT BANK	CHANNEL
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10

VEGETATION/STRUCTURE

Left bank: 100% grass, 0% trees, 0% shrubs, 0% bare, 0% water, 0% steep, 0% rocky, 0% other

Right bank: 100% grass, 0% trees, 0% shrubs, 0% bare, 0% water, 0% steep, 0% rocky, 0% other

Channel: 100% grass, 0% trees, 0% shrubs, 0% bare, 0% water, 0% steep, 0% rocky, 0% other

19 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1016

LAND USE WITHIN 500m OF RIVER: Use 1-10 (10 = 100% bare/rock) or 11-12 (11 = 100% forest)

	L	R		L	R
Broadleaf/deciduous woodland	6	6	Boys, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	6	6
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m (tick "none" box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut	1	1	Recessed		
Vertical + toe	1	1	Reinforced - whole bank		
Slope (>45°)	1	1	Reinforced - top only		
Grass	1	1	Reinforced - toe only		
Composite	1	1	Artificial two-stage		
			Pierced		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = 0 Right bank None ☒ Banklength % = 0

NUMBER OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES		ASSOCIATED FEATURES	
Left	Right	None	Present
None	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Exposed buttress roots	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (Record exact number of riffles, pools and point bars)

Number of Riffles = 13	Pools = 0	Unvegetated Point Bars = 2	Vegetated Point Bars = 0
Waterfall/cascade	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Territorial flow (rapids)	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/slides)	<input type="checkbox"/>	Mittens island(s)	<input type="checkbox"/>
Sink flow (shack)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

19 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 4 of 4

ENTER SITE NUMBER 1016

LAND USE WITHIN 500m OF RIVER: Use 1-10 (10 = 100% bare/rock) or 11-12 (11 = 100% forest)

LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m (tick "none" box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut	1	1	Recessed		
Vertical + toe	1	1	Reinforced - whole bank		
Slope (>45°)	1	1	Reinforced - top only		
Grass	1	1	Reinforced - toe only		
Composite	1	1	Artificial two-stage		
			Pierced		

EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = 0 Right bank None ☒ Banklength % = 0

NUMBER OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES		ASSOCIATED FEATURES	
Left	Right	None	Present
None	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Exposed buttress roots	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (Record exact number of riffles, pools and point bars)

Number of Riffles = 13	Pools = 0	Unvegetated Point Bars = 2	Vegetated Point Bars = 0
Waterfall/cascade	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Territorial flow (rapids)	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/slides)	<input type="checkbox"/>	Mittens island(s)	<input type="checkbox"/>
Sink flow (shack)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1317

SWEEP-UP OVER 500m

CAND USE WITHIN 50m OF RIVER USE (in 50m width) or 1/2 of stream

	L	R		L	R
Broadleaf woodland			Deer, marten, fox		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tidal land		
Strawberry pasture			Substrate/forbes development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

NATURAL PROFILES WITHIN 500m (tick one box or estimate percentage banklength if present)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/recessed			Recessed		
Vertical + toe			Reinforced - whole bank		
Steep (>45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial new-stage		
			Poached		

EMBANKMENTS (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)		ASSOCIATED FEATURES (tick one box per feature)	
None	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>
Isolated/heather	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>
Self-sustaining	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
Conifers	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box or estimate percentage banklength if present)

Number of Riffles =	Pools =	Unvegetated Point Bars =	Vegetated Point Bars =
Tick one box per feature	None Present	None Present	None Present
Waterfall/cascade	<input type="checkbox"/>	Unvegetated mid-channel bar	<input type="checkbox"/>
Terraced flow (rapid)	<input type="checkbox"/>	Vegetated mid-channel bar	<input type="checkbox"/>
Laminar flow (pool glide)	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Side flow (slack)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1317

SWEEP-UP OVER 500m

CAND USE WITHIN 50m OF RIVER USE (in 50m width) or 1/2 of stream

CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest algal growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box or estimate percentage banklength if present)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box or estimate percentage banklength if present)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box or estimate percentage banklength if present)

BANKS	CHANNEL
None	None
Recessing	Dredging
Bank-moving	Wood-curtain
Enhancement	Enhancement works

CHOICED CHANNEL (tick one box or estimate percentage banklength if present)

In 33 % or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box or estimate percentage banklength if present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (tick one box or estimate percentage banklength if present)

SPECIAL FEATURES (tick one box or estimate percentage banklength if present)

DRIVER TYPING: (tick one box or estimate percentage banklength if present)

Number (1-14) ☐ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RMA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-11-1146; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1317

SWEEP-UP OVER 500m

CAND USE WITHIN 50m OF RIVER USE (in 50m width) or 1/2 of stream

CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest algal growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box or estimate percentage banklength if present)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box or estimate percentage banklength if present)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box or estimate percentage banklength if present)

BANKS	CHANNEL
None	None
Recessing	Dredging
Bank-moving	Wood-curtain
Enhancement	Enhancement works

CHOICED CHANNEL (tick one box or estimate percentage banklength if present)

In 33 % or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box or estimate percentage banklength if present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (tick one box or estimate percentage banklength if present)

SPECIAL FEATURES (tick one box or estimate percentage banklength if present)

DRIVER TYPING: (tick one box or estimate percentage banklength if present)

Number (1-14) ☐ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RMA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-11-1146; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1317

SWEEP-UP OVER 500m

CAND USE WITHIN 50m OF RIVER USE (in 50m width) or 1/2 of stream

CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest algal growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements in: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box or estimate percentage banklength if present)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box or estimate percentage banklength if present)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box or estimate percentage banklength if present)

BANKS	CHANNEL
None	None
Recessing	Dredging
Bank-moving	Wood-curtain
Enhancement	Enhancement works

CHOICED CHANNEL (tick one box or estimate percentage banklength if present)

In 33 % or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box or estimate percentage banklength if present)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (tick one box or estimate percentage banklength if present)

SPECIAL FEATURES (tick one box or estimate percentage banklength if present)

DRIVER TYPING: (tick one box or estimate percentage banklength if present)

Number (1-14) ☐ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RMA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-11-1146; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 1047 River CHELMER Mid-section grid reference if different from designated site: T676176
 Date: 22.4.1994 Start time: 10:50 Surveyor name: Phil Henville / Richard Rantage
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

1. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO FIELD FOR NEXT SECTION. RICHARD RANTAGE, WARRINGTON, WA. THE HELPLINE NUMBERS: PETER FOX 731-1114, PAUL RAYEN 730-4343, ANDREW BROOKES 735-5711

2. TIME TAKEN: _____

3. RIVER TYPING: Refer to photographs of river types and indicate which applies to the river.

4. SPECIAL FEATURES: eg. dam, weir, culvert, bridge, etc. (tick one box only)

5. RIVER DESCRIPTION: (Indicate if spot checks representative of site as a whole)

6. NOTABLE NATURAL PLANT SPECIES: (tick one box only)

7. CHOKED CHANNEL: (tick one box only)

8. EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

9. NUMBER OF ARTIFICIAL FEATURES: (tick one box only)

10. TRIBUTARIES: (tick one box only)

11. LOCATION OF MEASUREMENTS: (tick one box only)

12. BAD MATERIAL AT SITE: (tick one box only)

13. CHANNEL DIMENSIONS: (tick one box only)

14. DIMENSIONS AND INFLUENCES: (tick one box only)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

15. ENTER SITE NUMBER: 1047

16. LAND USE WITHIN 500M OF RIVER: (tick one box only)

17. BANK PROFILES: (tick one box only)

18. RIPARIAN ZONE: (tick one box only)

19. CHANNEL VEGETATION TYPES: (tick one box only)

20. CHANNEL VEGETATION STRUCTURE: (tick one box only)

21. CHANNEL VEGETATION: (tick one box only)

22. CHANNEL VEGETATION: (tick one box only)

23. CHANNEL VEGETATION: (tick one box only)

24. CHANNEL VEGETATION: (tick one box only)

25. CHANNEL VEGETATION: (tick one box only)

26. CHANNEL VEGETATION: (tick one box only)

27. CHANNEL VEGETATION: (tick one box only)

28. CHANNEL VEGETATION: (tick one box only)

29. CHANNEL VEGETATION: (tick one box only)

30. CHANNEL VEGETATION: (tick one box only)

31. CHANNEL VEGETATION: (tick one box only)

32. CHANNEL VEGETATION: (tick one box only)

33. CHANNEL VEGETATION: (tick one box only)

34. CHANNEL VEGETATION: (tick one box only)

35. CHANNEL VEGETATION: (tick one box only)

36. CHANNEL VEGETATION: (tick one box only)

37. CHANNEL VEGETATION: (tick one box only)

38. CHANNEL VEGETATION: (tick one box only)

39. CHANNEL VEGETATION: (tick one box only)

40. CHANNEL VEGETATION: (tick one box only)

41. CHANNEL VEGETATION: (tick one box only)

42. CHANNEL VEGETATION: (tick one box only)

43. CHANNEL VEGETATION: (tick one box only)

44. CHANNEL VEGETATION: (tick one box only)

45. CHANNEL VEGETATION: (tick one box only)

46. CHANNEL VEGETATION: (tick one box only)

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51. CHANNEL VEGETATION: (tick one box only)

52. CHANNEL VEGETATION: (tick one box only)

53. CHANNEL VEGETATION: (tick one box only)

54. CHANNEL VEGETATION: (tick one box only)

55. CHANNEL VEGETATION: (tick one box only)

56. CHANNEL VEGETATION: (tick one box only)

57. CHANNEL VEGETATION: (tick one box only)

58. CHANNEL VEGETATION: (tick one box only)

59. CHANNEL VEGETATION: (tick one box only)

60. CHANNEL VEGETATION: (tick one box only)

61. CHANNEL VEGETATION: (tick one box only)

62. CHANNEL VEGETATION: (tick one box only)

63. CHANNEL VEGETATION: (tick one box only)

64. CHANNEL VEGETATION: (tick one box only)

65. CHANNEL VEGETATION: (tick one box only)

66. CHANNEL VEGETATION: (tick one box only)

67. CHANNEL VEGETATION: (tick one box only)

68. CHANNEL VEGETATION: (tick one box only)

69. CHANNEL VEGETATION: (tick one box only)

70. CHANNEL VEGETATION: (tick one box only)

71. CHANNEL VEGETATION: (tick one box only)

72. CHANNEL VEGETATION: (tick one box only)

73. CHANNEL VEGETATION: (tick one box only)

74. CHANNEL VEGETATION: (tick one box only)

75. CHANNEL VEGETATION: (tick one box only)

76. CHANNEL VEGETATION: (tick one box only)

77. CHANNEL VEGETATION: (tick one box only)

78. CHANNEL VEGETATION: (tick one box only)

79. CHANNEL VEGETATION: (tick one box only)

80. CHANNEL VEGETATION: (tick one box only)

81. CHANNEL VEGETATION: (tick one box only)

82. CHANNEL VEGETATION: (tick one box only)

83. CHANNEL VEGETATION: (tick one box only)

84. CHANNEL VEGETATION: (tick one box only)

85. CHANNEL VEGETATION: (tick one box only)

86. CHANNEL VEGETATION: (tick one box only)

87. CHANNEL VEGETATION: (tick one box only)

88. CHANNEL VEGETATION: (tick one box only)

89. CHANNEL VEGETATION: (tick one box only)

90. CHANNEL VEGETATION: (tick one box only)

91. CHANNEL VEGETATION: (tick one box only)

92. CHANNEL VEGETATION: (tick one box only)

93. CHANNEL VEGETATION: (tick one box only)

94. CHANNEL VEGETATION: (tick one box only)

95. CHANNEL VEGETATION: (tick one box only)

96. CHANNEL VEGETATION: (tick one box only)

97. CHANNEL VEGETATION: (tick one box only)

98. CHANNEL VEGETATION: (tick one box only)

99. CHANNEL VEGETATION: (tick one box only)

100. CHANNEL VEGETATION: (tick one box only)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

A. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS: Complete all questions.

Site number: 1047 River CHELMER Mid-section grid reference if different from designated site: T676176
 Date: 22.4.1994 Start time: 10:50 Surveyor name: Phil Henville / Richard Rantage
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☐ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
 Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL:										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK:										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 1m wide zone. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE: (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK:	U	U	U	U	U	U	U	U	U	U
RIGHT BANK:	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE: (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES: (fill in each box with one entry only)

	1	2	3	4	5	6	7	8	9	10
NONE: (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Submerged										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or I)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9
LEFT BANK:									
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	SC	NO	NO	NO	NO	NO	NO	NO
CHANNEL:									
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	RF	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	TR	NO	NO	NO	NO
RIGHT BANK:									
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO

II. VEGETATION STRUCTURE (to be assessed over a 10m wide zone). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9
LEFT RIPARIAN ZONE (if none, enter NO)	U	S	S	S	S	U	U	S	U
LEFT BANK	U	B	U	B	S	U	S	S	U
RIGHT BANK	U	S	S	U	U	U	U	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	C	S	U	B	U	U	S	S

III. CHANNEL VEGETATION TYPES (not to be present more than one entry; use B for bare, U for uniform, S for simple, C for complex)

	1	2	3	4	5	6	7	8	9
NONE (tick as appropriate)									
Upriver wetlands									
Emergent herbs									
Emergent reeds/sedges									
Flowering-leaved									
Free-floating									
Amphibious									
Submerged									
Filamentous algae									

Use end column for overall assessment over 500m (use E or W)

[illegible]

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SWEET-UP OVER 500m: ☐ ENTER SITE NUMBER: 104

J. LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or J if present)

	L	R		L	R
Broadleaf/mixed woodland	<input type="checkbox"/>	<input type="checkbox"/>	Bog, marsh, fen	<input type="checkbox"/>	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	<input type="checkbox"/>	Improved/degraded grass	<input type="checkbox"/>	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	<input type="checkbox"/>	Tilled land	<input type="checkbox"/>	<input type="checkbox"/>
Scrub/brough pasture	<input type="checkbox"/>	<input type="checkbox"/>	Suburban/urban development	<input type="checkbox"/>	<input type="checkbox"/>

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or J if present)

	L	R		L	R
Natural/unmodified	<input type="checkbox"/>	<input type="checkbox"/>	Artificial/modified	<input type="checkbox"/>	<input type="checkbox"/>
Vertical/undercut	<input type="checkbox"/>	<input type="checkbox"/>	Resectioned	<input type="checkbox"/>	<input type="checkbox"/>
Vertical + toe	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - whole bank	<input type="checkbox"/>	<input type="checkbox"/>
Slope (> 45°)	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - top only	<input type="checkbox"/>	<input type="checkbox"/>
Gentle	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>	<input type="checkbox"/>
Composite	<input type="checkbox"/>	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	Peached	<input type="checkbox"/>	<input type="checkbox"/>

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = Right bank: None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

	Left	Right		Left	Right
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Semi-continuous	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Number of Riffles	Pools	Unvegetated Point Bars	Vegetated Point Bars
Tick one box per feature	None	Present	None	Present
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Torrential flow (rapids)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (run/glides)	<input type="checkbox"/>	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	0.7	Bank full height (m)
Bank height if different (m)	1.0	Bank height if different (m)
Embankment height (m)		Embankment height (m)

Bed material at site is: consolidated ☐ cluses: algal growth compact, stable
unconsolidated ☐ cluses: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick "none" where appropriate)

None ☐ Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick box(es))

BANKS	CHANNEL
None <input type="checkbox"/>	None <input type="checkbox"/>
Resectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing <input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Outline if spot checks representative of site as a whole)

W. SPECIAL FEATURES (eg obvious adjacent habitats of high interest; incidental sightings)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN ☐ 55 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAMPED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. TELEPHONE: 01925 434444. FAX: 01925 434445. EMAIL: PETER.FOX@NIA.NHS.UK

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

H. VEGETATION STRUCTURE (to be assessed over a 1m wide zone)

Left Bank: ☐ Right Bank: ☐

I. CHANNEL VEGETATION TYPES (in 1m x 1m plots; use E (≥ 33% area) or J if present)

	Left Bank	Right Bank
Emergent herbaceous	<input type="checkbox"/>	<input type="checkbox"/>
Emergent sedges	<input type="checkbox"/>	<input type="checkbox"/>
Free-floating	<input type="checkbox"/>	<input type="checkbox"/>
Amphibious	<input type="checkbox"/>	<input type="checkbox"/>
Submerged	<input type="checkbox"/>	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Site number: 104

Grid Reference: 72 200 170

Surveyor name: J. Fox

Start time: 12:20

Designated site: ☐

B. FIELD SURVEY DETAILS (Complete all questions)

Distance from source (km): ☐

Soil geology: ☐

Mean Annual Flow category (1-10): ☐

Slope: ☐

Altitude (m): ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐

Photograph of channel measurement site? Yes ☐ No ☐ (tick one box)

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Are conditions affecting survey? Yes ☐ No ☒ (tick one box)

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly cultivated ☐ open, but bed or banks predominantly artificial (eg box reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg, mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification (semi-natural) ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ (tick one box)

F. PREDOMINANT FLOW TYPE (tick one box only)

step pool cascade ☐ riffle pool ☐ approximately laminar ☒ unimpounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 1053 River: Unknown Mid-section grid reference if different from designated site: _____
 Date: 9/16/1994 Start time: 11:30 Surveyor name: J. BLACKBURN R. ARMSTRONG
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☒ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☐ impounded ☐

G. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle or pool)

	Channel	Left Bank	Right Bank
Bankfull height (m)	2.5	2.5	2.5
Bankfull width (m)	2.5	2.5	2.5
Bankfull height if different (m)	0.5	0.5	0.5
Bankfull width if different (m)	0.5	0.5	0.5
Water depth (m)	0.5	0.5	0.5
Embedded height (m)	0.5	0.5	0.5

H. EVIDENCE OF RECENT MANAGEMENT (check one box only)

Number of ☐ Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

I. CHANNEL CHANGES

Is 33% or more of the channel over 500m choked with vegetation? No ☐ Yes ☐

J. CHANNEL CHANGES

Bank movement ☐ Erosion ☐ Deposition ☐ Channel ☐ Banks ☐

K. TRIBUTARIES (tick one box only)

Location of measurement site: ☐ left ☐ right ☐ mid or side ☐ other (tick one box)

L. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total tick "none" where appropriate)

Significant tributary within 500m height? No ☐ Yes ☐

M. SPECIAL FEATURES (eg obstructions, adjacent habitats of high interest, included riparian)

N. RIVER TYPING Refer to photographs of river types and indicate which resembles the site.

Number (1-14) ☐ Name of item ☐

O. CHECK THIS FORM HAS BEEN COMPLETED CORRECTLY AND SIGNED, THEN RETURN TO: PETER FOR AKA NORTH WEST REGION, MICHIGAN, ANDREW BROOKS 745-5112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (bare) or U (uniform) or C (complex) or S (simple))

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/bushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source (km) _____

B. FIELD SURVEY DETAILS Complete all questions.

Site number: 1053 River: Unknown Mid-section grid reference if different from designated site: _____
 Date: 9/16/1994 Start time: 11:30 Surveyor name: J. BLACKBURN R. ARMSTRONG
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☒ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GA	GA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	SI	SI	SI	SI	SI	SI	SI	SI	SI	SI
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	GA	GA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NA	NA	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (bare) or U (uniform) or C (complex) or S (simple))

NONE (tick as appropriate)

Liverworts/mosses										
Emergent herbs										
Emergent reeds/bushes										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or F)

19 April 1991
 STUDY HABITAT SURVEY: 1991 REPLICATION
 TEN SPOT CHECKS (20 50m x 10m)
 Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)
 C: PHYSICAL ATTRIBUTES (to be assessed every element within a 1m x 1m zone)
 Fill in each box before moving onto H and I on each spot check. Use abbreviations in spot-check key
 1 2 3 4 5 6 7 8 9 10
 LEFT BANK: Proportion bank material (one entry only) 100 100 100 100 100 100 100 100 100 100
 - bank modification (one entry only) 0 0 0 0 0 0 0 0 0 0
 - bank form(s) 0 0 0 0 0 0 0 0 0 0
 CHANNEL: Proportion channel substrate (one entry only) 0 0 0 0 0 0 0 0 0 0
 - channel modification(s) 0 0 0 0 0 0 0 0 0 0
 Proportion flow type (one entry only) 0 0 0 0 0 0 0 0 0 0
 - channel form(s) 0 0 0 0 0 0 0 0 0 0
 RIGHT BANK: Proportion bank material (one entry only) 0 0 0 0 0 0 0 0 0 0
 - bank modification (one entry only) 0 0 0 0 0 0 0 0 0 0
 - bank form(s) 0 0 0 0 0 0 0 0 0 0
 II: VEGETATION STRUCTURE (to be assessed once a flow rate is reached; fill in each box with one entry only)
 U = bare S = sedge C = complex R = restioid
 LEFT RIPARIAN ZONE (if none, enter NO) 0 0 0 0 0 0 0 0 0 0
 LEFT BANK 0 0 0 0 0 0 0 0 0 0
 RIGHT BANK 0 0 0 0 0 0 0 0 0 0
 RIGHT RIPARIAN ZONE (if none, enter NO) 0 0 0 0 0 0 0 0 0 0
 I: CHANNEL VEGETATION TYPES (in 10m zone; use E, L, S, P, or C (percent) in box)
 NONE (tick one appropriate)
 Emergent herbs 0 0 0 0 0 0 0 0 0 0
 Emergent root/rhizomes 0 0 0 0 0 0 0 0 0 0
 Floating-leaved 0 0 0 0 0 0 0 0 0 0
 Amphibious 0 0 0 0 0 0 0 0 0 0
 Submerged 0 0 0 0 0 0 0 0 0 0
 Filamentous algae 0 0 0 0 0 0 0 0 0 0
 The end criterion for overall assessment over 10 spots (line 1 of 1)

29 April 1994 RIVER HABITAT SURVEY, 1994

Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m)	Slope	Mean Annual Flow category (1-10)
Solid geology	Drift geology	Planform category
Distance from source(km)		

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1055 River unknown Mid-section grid reference if different from designated site: SN05052

Date: 21.6.1994 Start time: 13.05 Surveyor name: J. BLACKBURN R. RAVITTACE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

	<input type="checkbox"/> vee
	<input type="checkbox"/> concave/bowl
	<input type="checkbox"/> stepped valley floor (terraced)
	<input checked="" type="checkbox"/> symmetrical
	<input type="checkbox"/> asymmetrical
	<input type="checkbox"/> gorga

PREDOMINANT CHANNEL FORM (tick one box only)

<input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforcement)
<input checked="" type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed
<input type="checkbox"/> no obvious modification ('semi-natural')

C. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

<input type="checkbox"/> torrential/whitewater	<input type="checkbox"/> riffle-pool	<input type="checkbox"/> step
<input type="checkbox"/> step-pool cascade	<input checked="" type="checkbox"/> approximately laminar	<input type="checkbox"/> impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL		RIGHT BANK	
Bankfull height (m)	0.7	Bankfull height (m)	0.75
Bank height if different (m)		Bank height if different (m)	
Embanked height (m)		Embanked height (m)	

Bed material at site is: consolidated ☐ cluses: algal growth compact, stable
 unconsolidated ☐ cluses: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)
 Significant tributary within 300m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick none where appropriate)
 None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT (Obtain right tick box)
 BANKS: L R CHANNEL: None ☐ None ☐
 Resectioning ☐ Dredging ☐
 Bank-mowing ☐ Weed-cutting ☐
 Enhancement ☐ Enhancement works ☐ Silt ☐

T. CHOSEN CHANNEL
 Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if present)
 Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)
 V. low flow pool - step-pool on left bank - no silt - no debris on left
 V. low flow pool - step-pool on right bank - some silt - no debris on right
 V. low flow pool - step-pool on both banks - some silt - no debris on both

W. SPECIAL FEATURES (tick box(es) if present)
 I. low flow pool - step-pool on left bank - no silt - no debris on left
 I. low flow pool - step-pool on right bank - some silt - no debris on right
 I. low flow pool - step-pool on both banks - some silt - no debris on both

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)
 Number (1-14) ☐ None of them ☐

Y. TIME TAKEN
 1 hr 10 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HR
 HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
 Solid geology Distance from source (km) Platform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1057 River: River Severn Mid-section grid reference if different from designated site:
 Grid Reference: S 44 44 067

Date: 8.12.1994 Start time: 10.05 Surveyor name: Peter Fox / James Fennell

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)
 Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

Channel dimensions to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.5	Bank full width (m) 2.1	Bank full height (m) 0.5
Bank height if different (m) 0.8	Water width (m) 1.3	Bank height if different (m) 1.3
Embankment height (m)	Water depth (m) 0.02	Embankment height (m)

Bed material at site: consolidated ☐ chest: slight growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: tick one box only

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: 0 = none, 1 = one, 2 = two, etc.

Name	Number of	Channel	Waters	Bridges	Outfalls
BANKS					
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-staking	<input type="checkbox"/>	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>	<input type="checkbox"/>

S. EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

Channel choked with vegetation? No ☐ Yes ☐

U. NOTABLE/NUISANCE PLANT SPECIES: (tick box(es) to record abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (approx 100 characters representative of site as a whole)

W. SPECIAL FEATURES: (eg debris, exposed habitats of high interest, historical significance)

X. RIVER TYPING: (tick one box only)

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN: 55

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431111 FAX: 01925 431112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION This information is being collected separately.

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Platform category
Distance from source (km)

FIELD SURVEY DETAILS Complete all questions

Site number: 1056 River: RITEC Mid-section grid reference if different from designated site: SN 117 005
Date: 7.1.1994 Start time: 15.30 Surveyor name: J. RACEY
Are conditions affecting survey? No ☐ Yes ☐ (if yes, state)

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorgo

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg mill leat, dyke)
☐ not artificial, but dammed
☐ no obvious modification ('semi-natural')

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

Channel dimensions to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.5	Bank full width (m) 2.1	Bank full height (m) 0.5
Bank height if different (m) 0.8	Water width (m) 1.3	Bank height if different (m) 1.3
Embankment height (m)	Water depth (m) 0.02	Embankment height (m)

Bed material at site: consolidated ☐ chest: slight growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: tick one box only

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: 0 = none, 1 = one, 2 = two, etc.

Name	Number of	Channel	Waters	Bridges	Outfalls
BANKS					
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-staking	<input type="checkbox"/>	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>	<input type="checkbox"/>

S. EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

Channel choked with vegetation? No ☐ Yes ☐

U. NOTABLE/NUISANCE PLANT SPECIES: (tick box(es) to record abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (approx 100 characters representative of site as a whole)

W. SPECIAL FEATURES: (eg debris, exposed habitats of high interest, historical significance)

X. RIVER TYPING: (tick one box only)

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN: 55

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431111 FAX: 01925 431112

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

Channel dimensions to be measured at one site on a straight uniform section, preferably across a riffle.

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.5	Bank full width (m) 2.1	Bank full height (m) 0.5
Bank height if different (m) 0.8	Water width (m) 1.3	Bank height if different (m) 1.3
Embankment height (m)	Water depth (m) 0.02	Embankment height (m)

Bed material at site: consolidated ☐ chest: slight growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES: tick one box only

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: 0 = none, 1 = one, 2 = two, etc.

Name	Number of	Channel	Waters	Bridges	Outfalls
BANKS					
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging	<input type="checkbox"/>	<input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-staking	<input type="checkbox"/>	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>	<input type="checkbox"/>

S. EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

Channel choked with vegetation? No ☐ Yes ☐

U. NOTABLE/NUISANCE PLANT SPECIES: (tick box(es) to record abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (approx 100 characters representative of site as a whole)

W. SPECIAL FEATURES: (eg debris, exposed habitats of high interest, historical significance)

X. RIVER TYPING: (tick one box only)

Number (1-14) ☐ None of them ☒

Y. TIME TAKEN: 55

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431111 FAX: 01925 431112

20 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER: Use E (E = 25% banklength) or F (F = percent)

Broads/mailed woodland E E Beg. marsh, fen

Coniferous plantation Improved/semi-improved grass

Moorland heath Tilled land

Scrub/rough pasture Suburban/urban development

LINEAR EXTENT OF RIPARIAN ZONE (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (tick E (E = 25% banklength) or F (F = percent))

Natural/unnmodified L R Artificial/modified

Vertical/undercut T P Reinforced - whole bank

Vertical + toe R Reinforced - toe only

Steep (> 45°) T Reinforced - toe only

Grate Reinforced - toe only

Composit Artificial m-steps

Parched

EMBANKMENTS (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Left ☐ Right ☐ F > 25%

Isolated/scarred ☐ ☐ ☐ Shading of channel

Regularly spaced, single ☐ ☐ ☐ Overhanging boughs

Occasional clumps ☐ ☐ ☐ Exposed bankside roots

Semi-continuous ☐ ☐ ☐ Under-scar tree roots

Continuous ☐ ☐ ☐ Filled trees

Woody debris ☐ ☐ ☐ ☐

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 1 Pools = 1 Unvegetated Point Bars = 1 Vegetated Point Bars = 0

Tick one box per feature

None ☐ Present ☐ None ☐ Present ☐

Waterfall/cascade ☐ ☐ ☐ ☐ Unvegetated mid-channel bar ☐ ☐

Torrential flow (rapids) ☐ ☐ ☐ ☐ Vegetated mid-channel bar ☐ ☐

Laminar flow (run/glide) ☐ ☐ ☐ ☐ Meters island(s) ☐ ☐

Static flow (slack) ☐ ☐ ☐ ☐ Unvegetated side bar ☐ ☐

Exposed bedrock ☐ ☐ ☐ ☐ Vegetated side bar ☐ ☐

Exposed boulders ☐ ☐ ☐ ☐ Artificial ☐ ☐

Use end column for overall assessment over 500m (tick E or F)

20 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER: Use E (E = 25% banklength) or F (F = percent)

Broads/mailed woodland E E Beg. marsh, fen

Coniferous plantation Improved/semi-improved grass

Moorland heath Tilled land

Scrub/rough pasture Suburban/urban development

LINEAR EXTENT OF RIPARIAN ZONE (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (tick E (E = 25% banklength) or F (F = percent))

Natural/unnmodified L R Artificial/modified

Vertical/undercut T P Reinforced - whole bank

Vertical + toe R Reinforced - toe only

Steep (> 45°) T Reinforced - toe only

Grate Reinforced - toe only

Composit Artificial m-steps

Parched

EMBANKMENTS (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Left ☐ Right ☐ F > 25%

Isolated/scarred ☐ ☐ ☐ Shading of channel

Regularly spaced, single ☐ ☐ ☐ Overhanging boughs

Occasional clumps ☐ ☐ ☐ Exposed bankside roots

Semi-continuous ☐ ☐ ☐ Under-scar tree roots

Continuous ☐ ☐ ☐ Filled trees

Woody debris ☐ ☐ ☐ ☐

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 1 Pools = 1 Unvegetated Point Bars = 1 Vegetated Point Bars = 0

Tick one box per feature

None ☐ Present ☐ None ☐ Present ☐

Waterfall/cascade ☐ ☐ ☐ ☐ Unvegetated mid-channel bar ☐ ☐

Torrential flow (rapids) ☐ ☐ ☐ ☐ Vegetated mid-channel bar ☐ ☐

Laminar flow (run/glide) ☐ ☐ ☐ ☐ Meters island(s) ☐ ☐

Static flow (slack) ☐ ☐ ☐ ☐ Unvegetated side bar ☐ ☐

Exposed bedrock ☐ ☐ ☐ ☐ Vegetated side bar ☐ ☐

Exposed boulders ☐ ☐ ☐ ☐ Artificial ☐ ☐

Use end column for overall assessment over 500m (tick E or F)

20 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER: Use E (E = 25% banklength) or F (F = percent)

Broads/mailed woodland E E Beg. marsh, fen

Coniferous plantation Improved/semi-improved grass

Moorland heath Tilled land

Scrub/rough pasture Suburban/urban development

LINEAR EXTENT OF RIPARIAN ZONE (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (tick E (E = 25% banklength) or F (F = percent))

Natural/unnmodified L R Artificial/modified

Vertical/undercut T P Reinforced - whole bank

Vertical + toe R Reinforced - toe only

Steep (> 45°) T Reinforced - toe only

Grate Reinforced - toe only

Composit Artificial m-steps

Parched

EMBANKMENTS (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Left ☐ Right ☐ F > 25%

Isolated/scarred ☐ ☐ ☐ Shading of channel

Regularly spaced, single ☐ ☐ ☐ Overhanging boughs

Occasional clumps ☐ ☐ ☐ Exposed bankside roots

Semi-continuous ☐ ☐ ☐ Under-scar tree roots

Continuous ☐ ☐ ☐ Filled trees

Woody debris ☐ ☐ ☐ ☐

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 1 Pools = 1 Unvegetated Point Bars = 1 Vegetated Point Bars = 0

Tick one box per feature

None ☐ Present ☐ None ☐ Present ☐

Waterfall/cascade ☐ ☐ ☐ ☐ Unvegetated mid-channel bar ☐ ☐

Torrential flow (rapids) ☐ ☐ ☐ ☐ Vegetated mid-channel bar ☐ ☐

Laminar flow (run/glide) ☐ ☐ ☐ ☐ Meters island(s) ☐ ☐

Static flow (slack) ☐ ☐ ☐ ☐ Unvegetated side bar ☐ ☐

Exposed bedrock ☐ ☐ ☐ ☐ Vegetated side bar ☐ ☐

Exposed boulders ☐ ☐ ☐ ☐ Artificial ☐ ☐

Use end column for overall assessment over 500m (tick E or F)

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ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER: Use E (E = 25% banklength) or F (F = percent)

Broads/mailed woodland E E Beg. marsh, fen

Coniferous plantation Improved/semi-improved grass

Moorland heath Tilled land

Scrub/rough pasture Suburban/urban development

LINEAR EXTENT OF RIPARIAN ZONE (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (tick E (E = 25% banklength) or F (F = percent))

Natural/unnmodified L R Artificial/modified

Vertical/undercut T P Reinforced - whole bank

Vertical + toe R Reinforced - toe only

Steep (> 45°) T Reinforced - toe only

Grate Reinforced - toe only

Composit Artificial m-steps

Parched

EMBANKMENTS (tick name; box or estimate percentage banklength (F percent))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None ☐ Left ☐ Right ☐ F > 25%

Isolated/scarred ☐ ☐ ☐ Shading of channel

Regularly spaced, single ☐ ☐ ☐ Overhanging boughs

Occasional clumps ☐ ☐ ☐ Exposed bankside roots

Semi-continuous ☐ ☐ ☐ Under-scar tree roots

Continuous ☐ ☐ ☐ Filled trees

Woody debris ☐ ☐ ☐ ☐

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

Number of Riffles = 1 Pools = 1 Unvegetated Point Bars = 1 Vegetated Point Bars = 0

Tick one box per feature

None ☐ Present ☐ None ☐ Present ☐

Waterfall/cascade ☐ ☐ ☐ ☐ Unvegetated mid-channel bar ☐ ☐

Torrential flow (rapids) ☐ ☐ ☐ ☐ Vegetated mid-channel bar ☐ ☐

Laminar flow (run/glide) ☐ ☐ ☐ ☐ Meters island(s) ☐ ☐

Static flow (slack) ☐ ☐ ☐ ☐ Unvegetated side bar ☐ ☐

Exposed bedrock ☐ ☐ ☐ ☐ Vegetated side bar ☐ ☐

Exposed boulders ☐ ☐ ☐ ☐ Artificial ☐ ☐

Use end column for overall assessment over 500m (tick E or F)

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A. CHANNEL DIMENSIONS AND INFLUENCES (Measure at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest: silt/growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

B. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

C. NUMBER OF ARTIFICIAL FEATURES (Use only method, other total; tick one box where appropriate)

None	Number of	Culverts	Weirs	Bridges	Outfalls

D. EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None <input type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-mowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/>

E. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☒ Yes ☐

F. NOTABLE NUISANCE PLANT SPECIES (tick box(es); tick none if none observed)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

G. A BRIEF DESCRIPTIVE SENTENCE (Underline if spot check representative of site or a whole reach)

SPOT REACH SITE. RUMMIL 20 010 010000 POSSIBLY BRILLIANT WILT. EVIDENCE OF GRASS SPRL IN SOME SECTIONS OF GRASS. WATER STAGE. RUMMIL 20 010 010000

H. SPECIAL FEATURES (if stream, adjacent habitats of high interest (woodland, riparian))

I. RIVER TYPING (Refer to photographs of river types and outline which represent the site)

Number (1-14) ☒ None of them ☐

J. TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NEA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. HELPLINE NUMBERS: PETER FOX 7-21-3146; PAUL RAVEN 7-16-4313; ANDREW BROOKES 7-25-5712

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 2

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10)
Solid geology Distance from source (km) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1060 River TAWE Mid-section grid reference if different from designated site: SN742057
Date: 29.1.1994 Start time: 12.00 Surveyor name: P. HUNN / R. HUNN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

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CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site in a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK			
Bankfull height (m)	1.75	Bankfull width (m)	50.0	Bankfull height (m)	1.75
Bank height if different (m)	2.75	Water width (m)	33.0	Bank height if different (m)	1.50
Embankment height (m)		Water depth (m)	0.20	Embankment height (m)	

Bed material at site: consolidated ☐ chest: silt/growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (e.g. turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only) Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (tick one box only) None ☐ Culverts = 0 Weirs = 2 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box only) Banks: None ☐ L ☐ R ☒ Channel: None ☐ Dredging ☐ Weed-cutting ☐ Enhancement ☒ (tick one box)

CHOTED CHANNEL Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box only) Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (Indicate if your description is representative of site at a glance)
The channel is a straight uniform section, predominantly gravel bedded, with some silt and organic matter. The banks are grassy and the water is clear.

SPECIAL FEATURES (tick one box only) VEGE BANK, EXTENSIVE CHANGE OF JAPANESE KNOTWEED ON RIGHT BANK.

RIVER TYPING (Refer to photographs of river types that indicate a river type) Number (1-14) ☐ None of them ☒

TIME TAKEN (tick one box only) 1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431211; FAX: 01925 431212; ANDREW BROOKES 01925 531212

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

Site number: 1085 River: R2000 Mid-section grid reference if different from designated site: R2000

Date: 29/4/1994 Start time: 9.50 Surveyor name: N. CRISP & M. DEVILLE

Are conditions affecting survey? No ☒ Yes ☐ (If yes, state:)

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only) vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only) predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. bar reinforced) ☐ open, little or no obvious reinforcement, but resessioned and/or realigned ☐ open, but predominantly artificially dug (e.g. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only) Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only) torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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TEN SPOT CHECKS (a 50m spot)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GP	GP	EA	EA	EA	EA	BR	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	RI	NO	NO	NO
- bank feature(s)	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB
CHANNEL										
Predominant channel substrate (one entry only)	CO	CO	CO	CO	CO	CO	CO	CO	CO	CO
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	BC	BC	RR	BC	BC	RR	RR	EA	EA	EA
- bank modification (one entry only)	NO	NO	RI	NO	NO	RI	RI	NO	NO	NO
- bank feature(s)	SB	SB	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide zone) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (tick one box only) NONE (tick as appropriate) ☒ Upriver/mosses ☒ Emergent herbs ☒ Emergent reeds/sedges ☒ Floating-leaved ☒ Free-floating ☒ Amphibious ☒ Submerged ☒ Filamentous algae ☒

Use one column for overall assessment over 500m (use E or V)

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ENTER SITE NUMBER 1060

LAND USE WITHIN 100m OF RIVER (tick one box only) L R L

	L	R	L
Broadleaf/woodland	E	E	
Coniferous plantation			
Moorland/heath			
Scrub/rough pasture			
Suburban/urban development			

LINEAR EXTENT OF RIPARIAN ZONE (tick one box only) Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

RIPARIAN PROFILES WITHIN 500m (tick one box only) L R L

	L	R	L
Natural/undisturbed			
Vertical undercut	7	7	
Vertical + toe	7	7	
Slope (> 45°)	7	7	
Grass	7	7	
Composite	7	7	
Artificial/modified			
Reinforced			
Reinforced - whole bank			
Reinforced - top only			
Reinforced - toe only			
Artificial two-stage			
Partial			

LAIR BANKS (tick one box only) Left bank None ☒ Banklength % = 100 Right bank None ☐ Banklength % = 100

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box only) L R L

	L	R	L
Trees (tick one box per bank)			
None			
Isolated/scattered			
Regularly spaced, single			
Occasional clumps			
Semi-continuous			
Continuous			
Associated features (tick one box per feature)			
Shading of channel			
Overhanging boughs			
Exposed bankside roots			
Underwater tree roots			
Fallen trees			
Woody debris			

SATURN CHANNEL FEATURES (tick one box only) L R L

	L	R	L
Number of riffles = 3			
Tick one box per feature			
Waterfall/cascade			
Torrential flow (rapid)			
Laminar flow (slow glide)			
Stale flow (back)			
Exposed bedrock			
Exposed boulders			
Unvegetated mid-channel bars			
Vegetated mid-channel bars			
Marsh island(s)			
Unvegetated side bar			
Vegetated side bar			
Artificial			

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SECTION 1: CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK		CHANNEL		RIGHT BANK	
Bank full height (m)	1.5	Bank full width (m)	2.6	Bank full height (m)	1.5
Bank height if different (m)	1.5	Water width (m)	2.2	Bank height if different (m)	1.5
Embarked height (m)	—	Water depth (m)	0.5	Embarked height (m)	—

Bed material at site is: consolidated ☒ clastic: algal growth compact, stable
 unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

ROUGH NUMBER OF ARTIFICIAL FEATURES (use only check, then count tick, none if none appropriate)

None ☒ Number of Culverts = Wells = Bridges = Outfalls =

SECTION 2: EVIDENCE OF RECENT MANAGEMENT

BANKS		CHANNEL	
None	<input checked="" type="checkbox"/> L <input checked="" type="checkbox"/> R	None	<input checked="" type="checkbox"/>
Reclamation	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-erosion	<input type="checkbox"/>	Wood-cutting	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	Enhancement works	<input type="checkbox"/>

Is 33% or more of the channel over 500m choked with vegetation? No ☐ YES ☐

UNDESIRABLE NUISANCE PLANT SPECIES (tick box(es), No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if spot check, representative of site or a whole)

WATERAL NEW BRIDGE SMALLER CHANNEL 0.5m x 0.5m SPREADWOOD CV

SPECIAL FEATURES (tick box(es), indicate if high current, increased siltation, etc)

RIVER TYING (tick box(es), indicate if river dykes and culverts which restricts flow)

Number (1-14) ☒ None of them ☐ BUT NOT NARRABLE - SERIAL!

TIME TAKEN (hours) 1.5

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-213140; PAUL RAYEN 7-10-4341; ANDREW BROOKES 7-25-5712

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SECTION 1: BACKGROUND INFORMATION

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km) 6.25 BK

SECTION 2: FIELD SURVEY DETAILS

Site number: 1087 River: SUREY Mid-section grid reference if different from Grid Reference: TL 486052 designated site:

Date: 22.1.1994 Start time: 12:00 Surveyor name: N. CRIEVE M. J. VILL

Any conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

SECTION 3: PREDOMINANT VALLEY FORM

(tick one box only)

SECTION 4: PREDOMINANT CHANNEL FORM

(tick one box only)

predominantly culverted ☐
 open, but bed or banks predominantly artificial (eg box reinforced) ☐
 open, little or no obvious reinforcement, but resectioned and/or realigned ☐
 open, but predominantly artificially dug (eg. mill race, dyke) ☐
 not artificial, but dammed ☐
 no obvious modification ('semi-natural') ☒

SECTION 5: NAVIGATION

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

SECTION 6: PREDOMINANT FLOW TYPE

(tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SECTION 1: SPOT CHECKS

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

SECTION 2: PHYSICAL ATTRIBUTES

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	UP	BA	TA	CA	CA	CA	CA	CA	CA	CA
- bank modification (one entry only)	EC	AG	AG	AG	AG	AG	AG	AG	AG	AG
- bank feature(s)	NO	AG	AG	AG	AG	AG	AG	AG	AG	AG
Predominant channel substrate (one entry only)	AT	SC	CL	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel feature(s)	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG
Predominant bank material (one entry only)	TA	TA	TA	TA	TA	TA	TA	TA	TA	TA
- bank modification (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- bank feature(s)	NO	AG	AG	AG	AG	AG	AG	AG	AG	AG

SECTION 3: VEGETATION STRUCTURE

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

SECTION 4: CHANNEL VEGETATION TYPES

(tick one box per bank)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Emergent beds										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end values for overall assessment over 500m (use E or V)

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SECTION 1: LAND USE WITHIN 500m OF RIVER

ENTER SITE NUMBER 1087

	L	R
Broadleaved woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Improved/semi-improved grass		
Tilled land		
Suburban/urban development		

SECTION 2: LINEAR EXTENT OF RIPARIAN ZONE

Left bank None ☐ Backlength % = 100 Right bank None ☐ Backlength % = 100

SECTION 3: BANK PROFILES WITHIN 500m OF RIVER

(tick one box per bank)

	L	R
Natural/unmodified		
Vertical/undercut		
Vertical + toe		
Steep (> 45°)		
Grass		
Composite		
Artificial/unmodified		
Re-sectioned		
Reinforced - a hole back		
Reinforced - top only		
Reinforced - toe only		
Artificial two-stage		
Poached		

SECTION 4: ENABANONENTS

Left bank None ☐ Backlength % = 100 Right bank None ☐ Backlength % = 100

SECTION 5: EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Underwater tree roots		
Fallen trees		
Woody debris		

SECTION 6: NATURAL CHANNEL FEATURES

(tick one box per feature)

	None	Present
Number of Riffles		
Waterfall/cascade		
Torrential flow (rapid)		
Laminar flow (run/glide)		
Stale flow (back)		
Exposed bedrock		
Exposed boulders		
Unvegetated mid-channel bars		
Vegetated mid-channel bars		
Island(s)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	GP	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	NO	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use B (bare), U (uniform), S (simple), C (complex))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or I)

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use B (bare), U (uniform), S (simple), C (complex))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or I)

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use B (bare), U (uniform), S (simple), C (complex))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or I)

22 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 4 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: use B (bare), U (uniform), S (simple), C (complex))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or I)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Distance from source(km) Planform category

FIELD SURVEY DETAILS: Complete all questions

Site number: 1088 River T. P. 8000 Mid-section grid reference if different from designated site: 72 65 066

Date 21.4.1994 Start time: 0930 Surveyor name: Peter Fox / Richard Raven

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resctioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
VEGETATION STRUCTURE (tick one box only)										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
CHANNEL VEGETATION TYPES (tick all relevant boxes)										
NONE (tick as appropriate)										
Live/semi-live										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Fresh-leaved										
Amphibious										
Submerged										
Filamentous algae										

Use mid column for overall assessment over 500m (use E or V)

1088

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1088

LAND USE WITHIN 500m OF RIVER (tick all relevant boxes)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/frough pasture			Suburban/urban development		

Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % =

Left bank PROFILES WITHIN 500m (tick all relevant boxes)

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Slope (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial two-stage		
			Pierced		

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right		None	Present	E
None			E > 10%			
Isolated/scattered			Shading of channel			
Regularly spaced, single			Overhanging boughs			
Occasional clumps			Exposed bankside roots			
Semi-continuous			Underwater tree roots			
Continuous			Fallen trees			
			Woody debris			

ASSOCIATED FEATURES (tick one box per feature)

Number of riffles = 3

Unvegetated Point Bars = 0 Vegetated Point Bars = 0

Unvegetated mid-channel bars = 0 Vegetated mid-channel bars = 0

Mature island(s) = 0

Unvegetated side bar = 0 Vegetated side bar = 0

Artificial = 0

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK CHANNEL RIGHT BANK

Bankfull height (m) 1.8m Bankfull width (m) 9m Bankfull height (m) 1.8m

Bank height if different (m) 1.8m Water width (m) 4m Bank height if different (m) 1.8m

Embedded height (m) Water depth (m) 0.05m Embankment height (m)

Bed material at site is: consolidated ☐ clean: slight growth compact, stable

unconsolidated ☐ clean: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributaries within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use only method then total; tick none where appropriate)

None ☐ Culverts = 0 Weirs = 0 Bridges = 2 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (tick all relevant boxes)

BANKS L R CHANNEL

None ☒ None ☒

Revetting ☐ Dredging ☐

Bank-sloping ☐ Wood-cutting ☐

Enhancement ☐ Enhancement works ☐ Stone ☐

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick all relevant boxes)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if you check representation of the site's water body)

MEANINGFUL, SLOW FLOWING RIVER, CHOKED IN PLACES WITH IBC, RUNNING THROUGH SEMI-IMPROVED PASTURE

SPECIAL FEATURES (tick all relevant boxes)

RIVER TYPING (Refer to photographs of river type and indicate which represents the site)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAVEN 7-18-4343; ANDREW BROOKES 7-25-5712

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ENTER SITE NUMBER 1090

LAND USE WITHIN 500m OF RIVER (tick one box per 50m x 100m prism)

Broadleaf/mixed woodland	<input checked="" type="checkbox"/>	Bag, marsh, fen	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	Improved/semi-improved grass	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	Tilled land	<input type="checkbox"/>
Scrub/rough pasture	<input checked="" type="checkbox"/>	Suburban/urban development	<input type="checkbox"/>

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m OF RIVER (tick one box per 50m x 100m prism)

Natural/unmodified	<input checked="" type="checkbox"/>	Artificial/modification	<input type="checkbox"/>
Vertical/undrained	<input checked="" type="checkbox"/>	Revetted	<input type="checkbox"/>
Vertical + toe	<input checked="" type="checkbox"/>	Reinforced - whole bank	<input type="checkbox"/>
Steep (> 45°)	<input checked="" type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>
Gentle	<input checked="" type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>
Composite	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>
		Poached	<input type="checkbox"/>

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

None	<input type="checkbox"/>	Right	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>
Semi-continuous	<input checked="" type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
		Woody debris	<input type="checkbox"/>

ASSOCIATED FEATURES (Tick one box per feature)

None	<input type="checkbox"/>	Present	<input type="checkbox"/>
Unvegetated mid-channel bars	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Unvegetated side bar	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Artificial	<input type="checkbox"/>		<input type="checkbox"/>

Number of riffles = 0 Pools = 0

Unvegetated Point Bars = 0 Vegetated Point Bars = 0

Number of riffles = 0 Pools = 0

Unvegetated mid-channel bars = 0 Vegetated mid-channel bars = 0

Unvegetated side bar = 0 Vegetated side bar = 0

Artificial = 0

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

ENTER SITE NUMBER 1090

CHANNEL DIMENSIONS AND INFLUENCES

Channel dimensions (to be measured at one site on a straight uniform section, preferably across a riffle)

Bankfull height (m)	0.55	Bankfull width (m)	2.30	Bankfull height (m)	0.50
Bank height if different (m)	1.50	Water width (m)	0.30	Bank height if different (m)	1.15
Embankment height (m)	0	Water depth (m)	0.01	Embankment height (m)	0

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ rap or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total, tick none where appropriate)

None ☐ Numbers of Culverts = 0 Weirs = 3 Bridges = 2 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Drivers, signs, ditch boxes)

BANKS

None	<input type="checkbox"/>	Channel	<input type="checkbox"/>
Revetting	<input type="checkbox"/>	Dredging	<input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	Weed-cutting	<input type="checkbox"/>
Enhancement	<input checked="" type="checkbox"/>	Enhancement works	<input type="checkbox"/>

State YES, PARTIAL

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) - No need to quantify abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site and channel)

SPECIAL FEATURES (Indicate if spot checks representative of site and channel)

Large pond adjacent to right bank

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN (tick one box)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1JH. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-18-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Platform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1090 River SANDON Bank Mid-section grid reference if different from Grid Reference: TL 751 050

Date: 1.1.1994 Start time: 16:00 Surveyor name: Peter Fox/Helen Brookes

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

PREDOMINANT CHANNEL FORM (tick one box only)

Navigation (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RT	HT	NO	HT	NO	HT	HT	HT	HT	HT
- bank feature(s)	NO	SC	HT	HT	SC	HT	HT	HT	HT	HT
Predominant channel substrate (one entry only)	CC	CP	GI	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	RT	HT	HT	HT	HT	HT	HT	HT	HT	HT
- channel feature(s)	NO	HT	HT	HT	HT	HT	HT	HT	HT	HT
Predominant bank material (one entry only)	CC	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RT	HT	HT	HT	HT	HT	HT	HT	HT	HT
- bank feature(s)	NO	HT	HT	HT	HT	HT	HT	HT	HT	HT

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)

S	S	C	C	U	S	S	C	S
---	---	---	---	---	---	---	---	---

RIGHT RIPARIAN ZONE (if none, enter NO)

S	S	U	U	U	U	S	S	U
---	---	---	---	---	---	---	---	---

CHANNEL VEGETATION TYPES (fill in each box with one entry only)

None (tick as appropriate)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Liverworts/mosses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent herbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergent reeds/sedges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flowering-leaved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free-floating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amphibious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Submerged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filamentous algae	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1091 River Mawdon Mid-section grid reference if different from designated site: _____
 Grid Reference: TL 865 033 WAKH
 Date: 25.1.1994 Start time: 12.55 Surveyor name: J. BLACEBARN
 R. HENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ turbulent ☐ laminar ☐ step pool cascade ☐ approximately laminar ☐ turbulent ☐ step pool cascade

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	CC	EA	FA	GA	HA	IA	JA	KA	LA	MA
- bank modification (one entry only)	RI	AO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	IC	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
Predominant flow type (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- channel modification(s)	BR	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	IC	IC	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	CC	FA	GA	HA	IA	JA	KA	LA	MA	NA
- bank modification (one entry only)	RI	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	IC	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	U	C	S	S	S	U
LEFT BANK	B	U	U	S	S	S	U	U	S	S
RIGHT BANK	S	U	U	U	S	S	S	S	S	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES (tick in relevant boxes with one entry; use 'B' for 10% area or 'V' for 100% area)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering reeds										
Free-floating										
Amphibious										
Submerged										

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J. LAND USE WITHIN 50m OF RIVER (tick, none, bar or estimate percentage banklength (if present))

	L	R		L	R
Broadleaf/deciduous woodland			Bag, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick, none, bar or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 50m (tick, none, bar or estimate percentage banklength (if present))

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/undercut			Resectioned		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. EXPOSURE OF RIPARIAN ZONE (tick, none, bar or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right		None	Present
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present		None	Present
Number of riffles = 6			Unvegetated mid-channel bars = 3		
Waterfall/cascade			Vegetated mid-channel bars		
Torrential flow (rapid)			Mature island(s)		
Laminar flow (run/glide)			Unvegetated side bar		
Stale flow (slack)			Vegetated side bar		
Exposed bedrock			Artificial		
Exposed boulders					

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P. CHANNEL DIMENSIONS AND INFLUENCES (measure at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 1.05	Bank full width (m) 4.90	Bank full height (m) 1.05
Bank height if different (m) 1.05	Water width (m) 2.50	Bank height if different (m) 1.10
Embanked height (m)	Water depth (m) 0.10	Embanked height (m)

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
 unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ eddy ☐ (tick one box)

Q. TRIBUTARIES (tick one box per tributary)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = 0 Width = 0 Bridges = 3 Outfalls = 0

S. EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-moving			Wood-culling
Enhancement			Enhancement works

T. CHOKED CHANNEL (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick one box per species)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

SHADY RIVER, OVER GRASS, VERY LITTLE FLOW, NOT REFLECT

W. SPECIAL FEATURES (tick one box per feature)

(A) RIVER TYPING (tick one box per type) and indicate which features the river has

Number (1-14) ☐ Name of them ☐

X. TUBE TAKEN (tick one box)

50 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 1HE
 HELPLINE NUMBERS: PETER FOX 7-31-3146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-35-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

ENTER SITE NUMBER 1093

LAND USE WITHIN 500m OF RIVER (tick one box or estimate percentage banklength if present)

Disturbed/modified woodland			Dog, marsh, fen		
Coniferous plantation			Improved/mixed-improved grass		
Moorland/heath			Tilled land		
Scrub/shrub pasture			Suburban/urban development		

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % =

WATER BANK PROFILES WITHIN 500m OF RIVER (tick one box or estimate percentage banklength if present)

Natural/unmodified			Artificial/unmodified		
Vertical/undercut			Revetted		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Gravel			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES	Left	Right	ASSOCIATED FEATURES	None	Present
None	<input type="checkbox"/>	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	<input type="checkbox"/>
Isolated/scattered	<input type="checkbox"/>	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	<input type="checkbox"/>
Regularly spaced, single	<input type="checkbox"/>	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	<input type="checkbox"/>
Occasional clumps	<input type="checkbox"/>	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	<input type="checkbox"/>
Scattered clumps	<input type="checkbox"/>	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>	<input type="checkbox"/>
Continuous	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>	<input type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles =	None	Present	Unvegetated point bars =	Vegetated point bars =
None	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>
Waterfall/cascade	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>
Terraced flow (rapid)	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>
Laminar flow (pool/slide)	<input type="checkbox"/>	<input type="checkbox"/>	Isolated island(s)	<input type="checkbox"/>
Stable flow (shrub)	<input type="checkbox"/>	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>	<input type="checkbox"/>	Artificial	<input type="checkbox"/>

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	Bankfull width (m)	Bankfull height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest algal growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick none where appropriate)

None ☐ Number of Culverts = 1 Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENTS (show signs tick below)

BANKS	None	Channel
None	<input type="checkbox"/>	<input type="checkbox"/>
Revetting	<input type="checkbox"/>	<input type="checkbox"/>
Bank-sowing	<input type="checkbox"/>	<input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick boxes; no need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (tick one box; no need to estimate abundance)

Upstream of reach (50m) vegetation with uniform profile, choked with emergent trees (poplar/birch) lower part near natural, sloped bank with some bankside trees

W. SPECIAL FEATURES (tick one box; no need to estimate abundance)

X. RIVER TYING (tick one box; no need to estimate abundance)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN 55 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 7-21-1140; PAUL RAYEN 7-10-4313; ANDREW BROOKES 7-15-5111

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

BACKGROUND INFORMATION (this information is being collected separately)

Altitude (m) Solid geology Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1093 River: L. L. A. Mid-section grid reference if different from designated site:

Date: 7.1.1994 Start time: 1430 Surveyor name: P. H. H. / T. H. H.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

<input type="checkbox"/> vee <input type="checkbox"/> concave/bowl <input type="checkbox"/> stepped valley floor (terraced) <input checked="" type="checkbox"/> symmetrical <input type="checkbox"/> asymmetrical <input type="checkbox"/> gorge	<input type="checkbox"/> predominantly cutwented <input type="checkbox"/> open, but bed or banks predominantly artificial (eg bar reinforced) <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input checked="" type="checkbox"/> no obvious modification ('semi-natural')
---	---

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

<input type="checkbox"/> torrential/whitewater <input type="checkbox"/> step-pool cascade <input type="checkbox"/> riffle-pool <input checked="" type="checkbox"/> approximately laminar <input type="checkbox"/> static <input type="checkbox"/> impounded
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29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 5m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	110	105	105	105	105	105	105	105	105	105
- bank modification (one entry only)	SC	EC	U2	U2	SC	105	SC	SC	105	U2
- bank feature(s)										
CHANNEL	3P	3P	3P	3P	CO	3P	CO	3P	CO	3P
Predominant channel substrate (one entry only)	AL	PL	PL	PL	AL	AL	AL	AL	AL	AL
Predominant flow type (one entry only)	100	105	105	105	105	105	105	105	105	105
- channel modification(s)	100	105	105	105	105	105	105	105	105	105
- channel feature(s)										
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	100	105	105	105	105	105	105	105	105	105
- bank modification (one entry only)	EC	105	105	EC	105	EC	105	105	105	105
- bank feature(s)										
VEGETATION STRUCTURE (to be assessed over a 10m wide reach; fill in each box with one entry only)	B = bare	U = uniform	S = simple	C = complex	Refer to spot-check key					
LEFT RIPARIAN ZONE (if none, enter NO)	S	115	105	105	105	S	S	105	105	105
LEFT BANK	S	6	S	105	105	6	U	S	S	S
RIGHT BANK	8	105	105	105	105	105	105	105	105	105
RIGHT RIPARIAN ZONE (if none, enter NO)	105	105	105	105	105	105	105	105	105	105
CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (2-33% bare) or S (33-66% silt) or U (66-100% uniform))										
NONE (tick as appropriate)										
Upland/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Platform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1095 River: LAN Mid-section grid reference if different from designated site: Start time: R+S Surveyor name: Peter Fox

Date: 2.1.1994

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bow ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned end/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 1m width zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	110	110	110	110	110	110	110	110	110	110
- bank feature(s)	110	110	EA	EA	110	110	EA	110	EA	110
CHANNEL										
Predominant channel substrate (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant flow type (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- channel modification(s)	110	110	EA	EA	110	110	EA	110	EA	110
- channel feature(s)	110	110	EA	EA	110	110	EA	110	EA	110
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	110	110	110	110	110	110	110	110	110	110
- bank feature(s)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA

VEGETATION STRUCTURE (to be assessed across the 1m width zone for each spot check)

B = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter N0)	S	S	110	110	C	C	S	S	C	C
LEFT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter N0)	S	C	C	C	C	C	S	110	C	C

CHANNEL VEGETATION TYPES (to be assessed across the 1m width zone for each spot check)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or S)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER: 1095

LAND USE WITHIN 50m OF RIVER (tick one box per 50m)

	L	R		L	R
Broadleaf/mixed woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per 50m)

Left bank None ☐ Backlength = 30 Right bank None ☐ Backlength = 70

BANK PROFILES WITHIN 50m (tick one box per 50m)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/steep			Recessed		
Vertical + toe			Reinforced - whole bank		
Step (> 45°)			Reinforced - top only		
Grass			Reinforced - toe only		
Composite			Artificial re-usage		
			Poached		

EMBANKMENTS (tick one box per 50m)

Left bank None ☒ Backlength = Right bank None ☒ Backlength =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

	Left	Right		Left	Right
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	Left	Right		Left	Right
Number of Riffles = 1			Unvegetated Point Bars = 1		
Waterfall/cascade			Vegetated Point Bars = 0		
Terraced flow (rapid)			Unvegetated old-channel bars		
Lamellar flow (run/glide)			Vegetated old-channel bars		
Stair flow (duck)			Mature island(s)		
Exposed bedrock			Unvegetated side bar		
Exposed boulders			Vegetated side bar		
			Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS (to be measured at spot site on a straight uniform section, preferably across a riffle)

	CHANNEL	RIGHT BANK
Bankfull height (m)	2.7	Bankfull height (m)
Bank height if different (m)	2.5	Bank height if different (m)
Embankment height (m)	2.5	Embankment height (m)

Bed material at site is: consolidated ☒ clastic: silt/clay growth compact, stable
unconsolidated ☐ clastic: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use 0/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20)

None ☐ Culverts = 0 Weirs = 1 Bridges = 0 Outfalls = 1

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

	L	R	CHANNEL
None			None
Recessing			Dredging
Bank-moving			Wood-culling
Enhancement			Enhancement works
			State

CHOKED CHANNEL (tick one box only)

Is 5% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

PHOTABLE PLANT SPECIES (tick one box per species)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per sentence)

Top section: very steep, with many cliffs - high water level
Bottom: shallow, with many rocks - low water level

SPECIAL FEATURES (tick one box per feature)

Large boulder in channel - high water level

RIVER TYPING (tick one box per type)

Number (1-14) ☐ None of them ☐

STATE TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NWA NORTH WEST REGION, RICHARD PARKLOUGH HOUSE, WASHINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYN 7-18-4343; ANDREW BROOKES 7-25-5715

29 April 1994 NEW RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1075

LAND USE WITHIN 500m OF RIVER (tick one box)

Broadleaf/mixed woodland	<input type="checkbox"/>	<input type="checkbox"/>	Dec. marsh, fen	<input type="checkbox"/>	<input type="checkbox"/>
Coniferous plantation	<input type="checkbox"/>	<input type="checkbox"/>	Improved/semi-improved grass	<input type="checkbox"/>	<input type="checkbox"/>
Moorland/heath	<input type="checkbox"/>	<input type="checkbox"/>	Tilled land	<input type="checkbox"/>	<input type="checkbox"/>
Scrub/rough pasture	<input type="checkbox"/>	<input type="checkbox"/>	Suburban/urban development	<input type="checkbox"/>	<input type="checkbox"/>

LINEAR EXTENT OF RIPARIAN ZONE (tick one box)

Left bank None ☐ Banklength % = 90 Right bank None ☐ Banklength % = 97

NATURAL/UNMODIFIED (tick one box)

Vertical/horizontal	<input type="checkbox"/>	<input type="checkbox"/>	Artificial/modified	<input type="checkbox"/>	<input type="checkbox"/>
Vertical + toe	<input type="checkbox"/>	<input type="checkbox"/>	Re-sectioned	<input type="checkbox"/>	<input type="checkbox"/>
Step (> 45°)	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - whole bank	<input type="checkbox"/>	<input type="checkbox"/>
Grass	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - top only	<input type="checkbox"/>	<input type="checkbox"/>
Composite	<input type="checkbox"/>	<input type="checkbox"/>	Reinforced - toe only	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	Artificial two-stage	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	Poached	<input type="checkbox"/>	<input type="checkbox"/>

EMBANKMENTS (tick one box)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

PRESENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

Trees (tick one box per bank)	None	<input type="checkbox"/>	Isolated/heather	<input type="checkbox"/>	Regularly spaced, single	<input type="checkbox"/>	Occasional clumps	<input type="checkbox"/>	Scrub-coniferous	<input type="checkbox"/>	Coniferous	<input type="checkbox"/>
ASSOCIATED FEATURES (tick one box per feature)	None	<input type="checkbox"/>	Shading of channel	<input type="checkbox"/>	Overhanging boughs	<input type="checkbox"/>	Exposed bankside roots	<input type="checkbox"/>	Underwater tree roots	<input type="checkbox"/>	Fallen trees	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	Woody debris	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles =	<input type="checkbox"/>	Number of pools =	<input type="checkbox"/>	Unvegetated Point Bars =	<input type="checkbox"/>	Vegetated Point Bars =	<input type="checkbox"/>
Waterfall/cascade	<input type="checkbox"/>	Unvegetated mid-channel bars	<input type="checkbox"/>	Vegetated mid-channel bars	<input type="checkbox"/>	Mature island(s)	<input type="checkbox"/>
Terraced flow (right)	<input type="checkbox"/>	Unvegetated side bar	<input type="checkbox"/>	Vegetated side bar	<input type="checkbox"/>	Artificial	<input type="checkbox"/>
Laminar flow (run/slide)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Stable flow (slack)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Exposed bedrock	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Exposed boulders	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

29 April 1994 NEW RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water width (m)	Bank height if different (m)
Embanked height (m)	Water depth (m)	Embanked height (m)

Bed material at site is: consolidated ☐ chest slight growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box)

None ☐ Number of Culverts = Weirs = Bridges = 1 Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box)

BANKS	CHANNEL
None	None
Re-sectioning	Dredging
Bank moving	Wood-cutting
Enhancement	Enhancement works

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NOISANCE PLANT SPECIES (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box)

1994 20/04/94 1116

SPECIAL FEATURES (tick one box)

RIVER TYPING (tick one box)

Number (1-14) ☐ None of them ☐

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 104 NORTH WEST ROAD, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JB. TEL: 01925 431140; FAX: 01925 431141; ANDREW BROOKES 01925 431142

29 April 1994 NEW RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1120 River T. of Crick Mid-section grid reference if different from designated site: 50754

Date: 21/12/1994 Start time: 12:15 Surveyor name: N. GREVE & M. DEYNE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box)

concave/bowl	<input checked="" type="checkbox"/>	stepped valley floor (terraced)	<input type="checkbox"/>	symmetrical	<input type="checkbox"/>	asymmetrical	<input type="checkbox"/>	gorge	<input type="checkbox"/>
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PREDOMINANT CHANNEL FORM (tick one box)

predominantly culverted	<input type="checkbox"/>	open, but bed or banks predominantly artificial (eg bar reinforced)	<input type="checkbox"/>	open, little or no obvious reinforcement, but resectioned and/or realigned	<input type="checkbox"/>	open, but predominantly artificially dug (eg. mill leat, dyke)	<input type="checkbox"/>	not artificial, but dammed	<input type="checkbox"/>	no obvious modification (semi-natural)	<input checked="" type="checkbox"/>
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NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater	<input type="checkbox"/>	riffle-pool	<input checked="" type="checkbox"/>	static	<input type="checkbox"/>	step-pool cascade	<input type="checkbox"/>	approximately laminar	<input type="checkbox"/>	impounded	<input type="checkbox"/>
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29 April 1994 NEW RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	A	C	L	E	A	E	A	E	A
bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
bank feature(s)	N	O	N	O	N	O	N	O	N	O
CHANNEL										
Predominant channel substrate (one entry only)	S	P	C	L	A	D	S	P	C	L
Predominant flow type (one entry only)	R	E	A	L	R	E	A	L	R	E
channel modification(s)	N	O	N	O	N	O	N	O	N	O
channel feature(s)	N	O	N	O	N	O	N	O	N	O
RIGHT BANK										
Predominant bank material (one entry only)	E	A	E	A	E	A	E	A	E	A
bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
bank feature(s)	N	O	N	O	N	O	N	O	N	O

VEGETATION STRUCTURE (to be assessed over a 10m wide zone); fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	N	O	N	O	U	S	S	S	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	N	O	U	U	S	S	S	U	U	U

CHANNEL VEGETATION TYPES (fill in each box with one entry only)

NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

The end column for overall assessment over 500m (use E or N)

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source(km) Drift geology Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1121 River: THE BREW Mid-section grid reference if different from designated site: TQ 94 89 52

Date: 21.4.1994 Start time: 6.30 pm Surveyor name: S. J. Fox

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 7r8

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 6

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

1. vee ☐ 2. predominantly culverted ☐ 3. open, but bed or banks predominantly artificial (eg box reinforced) ☐ 4. open, little or no obvious reinforcement, but resectioned and/or realigned ☐ 5. open, but predominantly artificially dug (eg. mill leat, dyke) ☐ 6. not artificial, but dammed ☐ 7. no obvious modification ("semi-natural") ☒

D. PREDOMINANT CHANNEL FORM (tick one box only)

1. vee ☐ 2. concave/bowl ☐ 3. stepped valley floor (terraced) ☐ 4. symmetrical ☒ 5. asymmetrical ☐ 6. gorge ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

1. torrential/whitewater ☐ 2. riffle-pool ☐ 3. static ☐ 4. step-pool/cascade ☐ 5. approximately laminar ☒ 6. impounded ☐

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 2 of 4

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be filled in at each spot check. Use abbreviations in spot-check key)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	VP	VP	EC	EC	EC	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	ST	ST	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	IL	RI	AL	DL	AL	RT	RT	AL	AL	AL
- channel modification(s)	PM	PM	IA	IA	IA	IA	IA	IA	IA	IA
- channel feature(s)	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC

H. VEGETATION STRUCTURE (to be filled in at each spot check. Use abbreviations in spot-check key)

B = bare U = uniform S = single C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	U	U	U	U	U	U	U	U	U
LEFT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT BANK	B	S	C	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	NO	S	S	U	U	U	U	U	U	U

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry per box (e.g. 1133) or 'X' for 'Other')

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverwort/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use and return for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

J. LAND USE WITHIN 500m OF RIVER (tick one box per feature)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tilled land		
Scrub/rough pasture			Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank None ☐ Banklength % 70 Right bank None ☐ Banklength % 80

L. BANK PROFILES WITHIN 500m OF RIVER (tick one box per feature)

	L	R		L	R
Natural/unmodified			Artificial/modified		
Vertical/undercut			Re-sectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

M. ENBANIMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

	Left	Right		None	Present E
TREES (tick one box per bank)			ASSOCIATED FEATURES (tick one box per feature)		
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present E		None	Present E
Number of Riffles = 2			Unvegetated Point Bars = 0		
Waterfall/cascade			Vegetated mid-channel bars		
Torrential flow (rapids)			Vegetated mid-channel bars		
Laminar flow (run/glide)			Mature island(s)		
Stale flow (slack)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 4 of 4

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m) 0.5	Bank full width (m) 2.25	Bank full height (m) 0.5
Bank height if different (m) 1.0	Water width (m) 0.3	Bank height if different (m) 0.75
Embankment height (m) -	Water depth (m) 0.03	Embankment height (m) -

Bed material at site is: consolidated ☒ chest algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Q. TRIBUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 3 - Details =

S. EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

BANKS	Channel
None <input checked="" type="checkbox"/>	None <input checked="" type="checkbox"/>
Re-sectioning <input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving <input type="checkbox"/>	Wood-curtain <input type="checkbox"/>
Enhancement <input type="checkbox"/>	Enhancement works <input type="checkbox"/>

T. CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? No ☐ YES ☒ VERY

U. NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Adorned by 2 large trees - open (lowland) below 3/4 of channel
Some flow in banks with rising water level

W. SPECIAL FEATURES (tick one box per feature)

None ☐

X. RIVER TYPING (tick one box per feature)

Number (1-14) 14 None of them ☐

Y. TIME TAKEN (tick one box per feature)

None ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-15-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

DATE: 29 April 1994 RIVER: RIVER HABITAT SURVEY 1994 VERIFICATION

SPOT CHECKS (ca 50m apart) (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide strip)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK OF CHANNEL										
~ Predominant bank material (one entry only)	EA	EA	CC	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NB	NO	RI	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NB	SC	NO	NO	EC	NO	SC	NO	NO	SC
CHANNEL										
~ Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
~ Predominant flow type (one entry only)	HL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	HL	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	HL	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK OF CHANNEL										
~ Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	RS	RS	RS	RS	RS
VEGETATION STRUCTURE (to be assessed over a 10m wide strip)										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	NO	NO	S	U	S	
LEFT BANK	U	U	U	U	U	U	U	U	U	S
RIGHT BANK	U	U	U	U	U	U	U	U	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U
CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only, use E (20% or less) or C (greater than 20%))										
NONE (tick as appropriate)										
Livewoody/mosses										
Emergent herbs/turfers EOREYPA ^{submersed} ^{emergent}										
Emergent reeds/sedges CAREY, IRSS, ^{submersed} ^{emergent}	E	E	E	E	E				E	E
Flowering-leaved										
Free-floating ^{submersed} ^{emergent} ^{free-floating}	✓	✓	✓	✓						✓
Amphibious ^{submersed} ^{emergent} ^{free-floating}										
Submerged ^{submersed} ^{emergent} ^{free-floating}						E			E	
Filamentous algae	E	✓			E	✓	E		E	E

Use end column for overall assessment over 500m (use E or S)

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29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1123

LAND USE WITHIN 500m OF RIVER (tick one box or 2 if present)

Broads/forest woodland	L	R	Bog, marsh, fen	L	R
Coniferous plantation			Improved/semi-improved grass	E	B
Moorland/heath			Tilled land		
Scrub/heath pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 20 Right bank None ☐ Banklength % = 50

BANK PROFILES WITHIN 500m (tick one box or estimate percentage banklength if present)

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undrained			Resectioned		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Grades			Reinforced - toe only		
Composites			Artificial two-stage		
			Ponded		

EMBANKMENTS (tick one box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

None	L	R	Shading of channel	None	Present
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Fallen trees		
Continuous			Woody debris		

ASSOCIATED FEATURES (tick one box per feature)

None ☐ Present ☐

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles	L	R	Unvegetated Point Bars	None	Present
Waterfall/cascade			Unvegetated mid-channel bars		
Terraced flow (triple)			Vegetated mid-channel bars		
Laminar flow (single)			Algae islands		
Stasis flow (stagnant)			Unvegetated side bar		
Exposed bedrock			Vegetated side bar		
Exposed boulders			Artificial		

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1123

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably with a riffle)

LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	Bank full width (m)	Bank full height (m)
Bank height if different (m)	Water depth (m)	Bank height if different (m)
Embank height (m)	Water width (m)	Embank height (m)

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only method, then (tick one box, where appropriate))

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 0 Outfalls = 3

EVIDENCE OF RECENT MANAGEMENT (Obvious signs tick one box)

BANKS	L	R	CHANNEL
None			None
Resectioning			Dredging
Bank-mowing			Weed-cutting
Enhancement			Enhancement works
			Stake

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NOISANCE PLANT SPECIES (tick one box, No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

300m reach, gently meandering river, running through a semi-wooded, open landscape. 2 small channels.

SPECIAL FEATURES (tick one box, adjacent habitats of high interest, incidental sightings)

MANY TRIGS

RIVER TYPING (Refer to photographs of river types and indices, which resemble the site)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box)

1 hr

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA3 3JB
 HELPLINE NUMBERS: PETER FOX 0121-2115; PAUL RAYN 01643-4331; ANDREW BROOKES 0121-5111

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1124

BACKGROUND INFORMATION (The information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1124 River the r. of. Mid-section grid reference if different from Grid Reference: T051944 Time at designated site:

Date 22.1.94 Start time: 10:00 Surveyor name: P. HITCHCOCK / M. HAYATT

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 12

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 13

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

PREDOMINANT CHANNEL FORM (tick one box only)

valley

concave/bowl

stepped valley floor (terraced)

symmetrical

asymmetrical

gorge

predominantly culverted

open, but bed or banks predominantly artificial (eg box reinforced)

open, little or no obvious reinforcement, but resectioned and/or realigned

open, but predominantly artificially dug (eg mill leat, dyke)

not artificial, but dammed

no obvious modification ("semi-natural")

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater

step-pool cascade

riffle-pool

approximately laminar

static

impounded

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1124

TEN SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed across a 10m wide reach; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	C	S	S	S	U	U	U	S	S	U
LEFT BANK	S	S	S	S	U	U	U	S	C	U
RIGHT BANK	U	S	C	S	S	U	S	C	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	U	S	S	S	U	S	S	S	U

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only; B = 33% cover or more)

NONE (tick one box)

Liverworts/mosses

Emergent herbs

Emergent reeds/sedges

Floating-leaved

Free-floating

Amphibious

Submerged

Filamentous algae

Use end column for overall assessment over 500m (one B or 1)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Solid geology Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 1125 River: Tamese Mid-section grid reference if different from designated site: T9451946 8000

Date: 21/6/1994 Start time: 12.00 Surveyor name: Paul Hopley / Richard Brown

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but rescaled and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (as shown on map)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel, within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	EA	CA	CA	EA	EA	EA	EA	WP
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	RT
- bank feature(s)	NO	NO	NO	SC	NO	SC	SC	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	CA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE: (to be assessed over a 10m wide zone) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

	S	C	S	C	C	S	U	NO	NO
LEFT RIPARIAN ZONE (if none, enter NO)									
LEFT BANK	S	S	S	S	S	S	S	S	S
RIGHT BANK	U	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S

CHANNEL VEGETATION TYPES: (tick in relevant box) (tick one box in each of 10% bands per channel bank)

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or A)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

LAND USE WITHIN 500m OF RIVER: (tick in relevant box) (tick one box in each of 10% bands per river bank)

	L	R		L	R
Broadleaved woodland			Bog, marsh, fen		
Coniferous plantation			Improved/semi-improved grass	E	E
Moorland/heath			Tilled land		
Scrubrough pasture			Suburban/urban development		

LINEAR EXTENT OF RIPARIAN ZONE: (tick one box) (tick one box in each of 10% bands per river bank)

Left bank None ☐ Banklength % = 10 Right bank None ☐ Banklength % = 20

BANK PROFILES WITHIN 500m: (tick in relevant box) (tick one box in each of 10% bands per river bank)

	L	R		L	R
Natural/Unmodified			Artificial/Unmodified		
Vertical/Recurrent			Rescaled		
Vertical + toe			Reinforced - whole bank		
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

EMBANKMENTS: (tick one box) (tick one box in each of 10% bands per river bank)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

	Left	Right		None	Present
None			Shading of channel		
Isolated/scattered			Overhanging boughs		
Regularly spaced, single			Exposed bankside roots		
Occasional clumps			Underwater tree roots		
Semi-continuous			Falling trees		
Continuous			Woody debris		

NATURAL CHANNEL FEATURES: (tick one box per feature)

	None	Present		None	Present
Unvegetated Pool Bars			Unvegetated mid-channel bars		
Vegetated Pool Bars			Vegetated mid-channel bars		
Unvegetated side bar			Natural Island(s)		
Vegetated side bar			Unvegetated side bar		
Artificial			Vegetated side bar		

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES: (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bankfull height (m)	1	Bankfull width (m)	5.7
Bank height if different (m)	1	Water width (m)	3
Bank height if different (m)		Water depth (m)	0.03
Embankment height (m)			

Bed material at site is: consolidated ☐ loose algal growth compact, stable ☐
 unconsolidated ☐ clean: fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: (tick in relevant box) (tick one box in each of 10% bands per river bank)

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Obstacles ☐

EVIDENCE OF RECENT MANAGEMENT: (tick in relevant box) (tick one box in each of 10% bands per river bank)

	L	R		None	Present
BANKS			Channel		
Rescaling			Deadening		
Bank-mowing			Wood-cutting		
Enhancement			Enhancement works		

CHOKED CHANNEL: (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES: (tick box(es)) (tick one box in each of 10% bands per river bank)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

DESCRIPTIVE SENTENCE: (tick one box) (tick one box in each of 10% bands per river bank)

None ☐ Low ☐ Medium ☐ High ☐ Very High ☐

SPECIAL FEATURES: (tick in relevant box) (tick one box in each of 10% bands per river bank)

None ☐ Low ☐ Medium ☐ High ☐ Very High ☐

TIME TAKEN: (tick one box)

None ☐ Less than 10 min ☐ 10-30 min ☐ 30-60 min ☐ More than 60 min ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. THE HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYN 7-10-1343; ANDREW BROOKES 7-25-5711

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TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ , downstream end ☒ of site (Tick one box).

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	FA	FA	GA	GA	FA	FA	GA	FA	FA	GA
~ bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
~ bank feature(s)	NO	SC	SB	S	NO	SC	NO	SC	SC	SC
CHANNEL										
Predominant channel substrate (see entry only)	S	GP	S	S	S	GP	GP	GP	GP	GP
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	R	R	R	R	R
~ channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
~ channel feature(s)	NO	NO	R	R	R	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	GA	FA	FA	FA	GA	GA	FA	FA	FA	FA
~ bank modification (see entry only)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
~ bank feature(s)	NO	NO	S	S	NO	NO	NO	NO	NO	NO

II. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	S	C	S	S	S	U	NO	S	S	S
LEFT BANK	S	B	S	B	S	C	B	S	S	S
RIGHT BANK	S	S	B	B	B	S	C	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	S	C	C	C	C	C	C

III. CHANNEL VEGETATION TYPES (fill in relevant box(s) with one entry only B (to 33% area) or P (percent) or G (gross))

NONE (tick as appropriate)										
Upriver/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use the platform for overall assessment over 500m (see R or P).

20 April 1994					RIVER HABITAT SURVEY: 1994 VERIFICATION				
SECTION 1 - CHANNEL DIMENSIONS AND INFLUENCES									
Channel dimensions are to be measured at one site on a straight section, preferably across a point bar.									
LEFT BANK		CHANNEL				RIGHT BANK			
Bankfull height (m)	1.10	Bankfull width (m)	10.25	Bankfull height (m)		Bankfull width (m)	11.10		
Bank height if different (m)	0.40	Water width (m)	7.5	Bank height if different (m)		Bank height if different (m)	1.10		
Embedded height (m)		Water depth (m)	0.65	Embedded height (m)					
Bed material at site is:									
consolidated		<input type="checkbox"/>	chest: algal growth compact, stable						
unconsolidated		<input checked="" type="checkbox"/>	chest: fresh clean gravel, easily dislodged, loose						
unknown		<input type="checkbox"/>	inaccessible or not visible (e.g. turbid water)						
Location of measurements is:									
riffle	<input type="checkbox"/>	run or glide	<input checked="" type="checkbox"/>	other	<input type="checkbox"/>	(tick one box)			
Significant tributary within 500m length? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>									
NUMBER OF ARTIFICIAL FEATURES (Use GUT method; then total; tick none where appropriate)									
Name	<input type="checkbox"/>	Number of	Culverts = 0	Weirs = 0	Bridges = 0	Outfalls = 4			
EVIDENCE OF RECENT MANAGEMENT (check all that apply; tick none if not applicable)									
BANKS		L	R	CHANNEL					
Name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Name		<input checked="" type="checkbox"/>				
Revetting	<input type="checkbox"/>	<input type="checkbox"/>	Dredging		<input type="checkbox"/>				
Bank-sowing	<input type="checkbox"/>	<input type="checkbox"/>	Wood-casting		<input type="checkbox"/>				
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works		<input type="checkbox"/>	State			
IS IT A CHOSED CHANNEL?									
Is 35% or more of the channel over 500m choked with vegetation? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>									
NOTABLE NUISANCE PLANT SPECIES (list species here to estimate abundance)									
Giant Hogweed	<input type="checkbox"/>	Himalayan Balsam	<input checked="" type="checkbox"/>	Japanese Knotweed	<input type="checkbox"/>				
BRIEF DESCRIPTIVE SENTENCE (include UTM grid reference of site if available)									
GRASSLAND CHANNEL WITH BROADLY OPEN, SLOPED SIDES. RIGHT BANKS SLIGHTLY TOPOGRAPHICALLY HIGHER THAN LEFT BANKS. SLOPES ARE STEEP. VEGETATION IS GRASS AND HERBACEOUS. SLOPES ARE STEEP. VEGETATION IS GRASS AND HERBACEOUS.									
SPECIAL FEATURES (if relevant, describe features of high interest, including bank types)									
OTHER TYPING (refer to photographs of river types and indicate which streamlines the site)									
Number (1-14) <input checked="" type="checkbox"/> Name of class <input type="checkbox"/>									
ESTIMATE TAKEN AT <input checked="" type="checkbox"/> 11.00									
CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NWA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE TELEPHONE NUMBERS: PETER FOX 7-21-2146; PAUL RAVEN 7-18-4341; ANDREW BROOKES 7-25-5711									

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TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

GENERAL PHYSICAL ATTRIBUTES (for a straight, correct channel within 50m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK TYPE	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	E	A	E	A	E	A	E	A	E	A
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	N	O	N	O	N	O	N	O	N	O
CHANNEL TYPE	1	2	3	4	5	6	7	8	9	10
Predominant channel substrate (one entry only)	S	P	S	P	S	P	S	P	S	P
Predominant flow type (one entry only)	A	L	A	L	A	L	A	L	A	L
- channel modification(s)	N	O	N	O	N	O	N	O	N	O
- channel feature(s)	N	O	N	O	N	O	N	O	N	O
RIGHT BANK TYPE	1	2	3	4	5	6	7	8	9	10
Predominant bank material (one entry only)	E	A	E	A	E	A	E	A	E	A
- bank modification (one entry only)	N	O	N	O	N	O	N	O	N	O
- bank feature(s)	N	O	N	O	N	O	N	O	N	O
VEGETATION STRUCTURE (in a 5m x 5m area at 10m intervals from each bank over 100m wide zone)	1	2	3	4	5	6	7	8	9	10
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	S	S	S	S	S	S	S	S
LEFT BANK	E	U	U	R	U	U	B	S	U	B
RIGHT BANK	E	B	B	B	U	S	B	S	B	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	E	C	C	U	C	S	S
HYDROCHORIC VEGETATION TYPES (list in federal format with one entry) use B (2-3) or C (1-2) or U (1-2)										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges										
Flowering decid										
Fine-flowering										
Amphibious										
Submerged										
Filamentous algae	E	E	E	E	E	E	E	E	E	E

Use end column for overall assessment over 500m (use E or 1)

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION 03/06/94 Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	2.50	Bankfull width (m)	7.50	Bankfull height (m)	0.50
Bank height if different (m)	0.70	Water width (m)	5.50	Bank height if different (m)	0.50
Embanked height (m)		Water depth (m)	0.10	Embanked height (m)	

Bed material at site is: consolidated ☐ chest: silt/growth compact, stable
 unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick all that apply, then total; tick "none" where appropriate)

None <input checked="" type="checkbox"/>	Number of	Culverts =	Weirs =	Bridges =	Outfalls =
EVIDENCE OF RECENT MANAGEMENT (Obvious signs not hidden by vegetation)					

BANKS	L	R	CHANNEL
Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None <input type="checkbox"/>
Resectioning	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Wood-planting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/> State <input type="checkbox"/>

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick boxes (a) and (b) and (c) if appropriate)

Giant Hogweed <input type="checkbox"/>	Himalayan Balsam <input type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>
BRIEF DESCRIPTIVE SENTENCE (Outline 1/2 page sketch representative of site at a glance)		

Reach longed filled with willow. Heavy clay substrate with will in middle of channel. Edge - almost all willow not chok.

SPECIAL FEATURES (e.g. aspect, different habitat of high/low, potential riparian vegetation)

bank of reeds planted near bank right bank for a 100-120 meters

PHOTOGRAPHIC RECORD (tick box if photographs of river types and indicate which resembled the river)

Number (1-14) ☒ Name of team ☐

TIME TAKEN 35 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FDE, WINDRIVER NEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON WA4 1UB
 HELPLINE NUMBERS: PETER FOX 0121 402 1042; PAUL RAYEN 0114 434; ANDREW BROOKS 0121 574

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ENTER SITE NUMBER **1152**

LAND USE WITHIN 500m OF RIVER (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Deciduous/decid. woodland					
Coniferous plantation					
Moorland/heath					
Recreational pasture					
Suburban/urban development					

LINEAR EXTENT OF RIPARIAN ZONE (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Left bank: None ☒ Banklength % = 100 Right bank: None ☒ Banklength % = 100

BANK PROFILES WITHIN 500m OF SITE (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Natural/undisturbed					
Vertical/undisturbed					
Vertical + toe					
Step (>45°)					
Gravel					
Composite					
Artificial/modified					
Resectioned					
Reinforced - whole bank					
Reinforced - top only					
Reinforced - toe only					
Artificial two-stage					
Poached					

CHANNEL BANK PROFILES (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (Tick one box per feature)

None					
Isolated/scattered					
Regularly spaced, single					
Occasional clumps					
Semi-continuous					
Continuous					
Associated features					
Shading of channel					
Overhanging boughs					
Exposed bankside roots					
Underwater tree roots					
Fallen trees					
Woody debris					

CHANNEL FEATURES (Tick one box per feature)

Number of riffles (1-10)					
Waterfall/cascade					
Terraced flow (rapid)					
Laminar flow (run/flood)					
Stable flow (slick)					
Exposed bedrock					
Exposed boulders					
Unvegetated mid-channel bars					
Vegetated mid-channel bars					
Mittens Island(s)					
Unvegetated side bar					
Vegetated side bar					
Artificial					

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

LEFT BANK					
Bankfull height (m)	2.0				
Bank height if different (m)					
Embankment height (m)					
Channel					
Bankfull width (m)	9.75				
Water width (m)	8.0				
Water depth (m)	0.35				
RIGHT BANK					
Bankfull height (m)	2.0				
Bank height if different (m)	4.0				
Embankment height (m)					

Bed material at site is: consolidated ☒ chest: slight growth compact, stable
unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

EVIDENCE OF RECENT MANAGEMENT (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

BANKS: None ☒ Resectioning ☐ Back-casting ☐ Enhancement ☐

CHANNEL: None ☒ Dredging ☐ Weir-cutting ☐ Enhancement works ☐ State ☐

CHOICE OF CHANNEL (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Is 33% or more of the channel over 500m checked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

None ☒ Himalayan Bittersweet ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Describe if spot checks representative of site as a whole)

Longitudinal channel - Bank (with some clay) banks. Running through
Ditch/Plowing field. Lot of clay & some urban trees.

SPECIAL FEATURES (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

None ☒ None of them ☐

RIVER TYPING (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

Number (1-10) ☐ None of them ☒

TIME TAKEN (Use 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1BB
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYNER 7-10-4343; ANDREW GROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) ☐ Solid geology ☐ Slope ☐ Drift geology ☐ Mean Annual Flow category (1-10) ☐ Planform category ☐

FIELD SURVEY DETAILS (Complete all questions)

Site number: **1153** River: **BRENT** Mid-section grid reference if different from designated site: **N 915 E 4**

Date: **1/6/1994** Start time: **12.00** Surveyor name: **N. GRIEVE & B. HUTCHINSON**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: **if yes, state**

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (Tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (Tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☒ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

NAVIGATION (Tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (Tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☒ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

SPOT CHECKS (50m stretch)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES (No bar marked across channel within 4m, side zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	E	E	E	E	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N
CHANNEL										
Predominant channel substrate (one entry only)	S	S	S	S	S	S	S	S	S	S
Predominant flow type (one entry only)	A	A	A	A	A	A	A	A	A	A
- channel modification(s)	N	N	N	N	N	N	N	N	N	N
- channel feature(s)	N	N	N	N	N	N	N	N	N	N
RIGHT BANK										
Predominant bank material (one entry only)	E	E	E	E	E	E	E	E	E	E
- bank modification (one entry only)	N	N	N	N	N	N	N	N	N	N
- bank feature(s)	N	N	N	N	N	N	N	N	N	N

VEGETATION STRUCTURE (Use abbreviations in spot-check key)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	B	B	B	B	B	B	B	B	B	B
RIGHT BANK	B	B	B	B	B	B	B	B	B	B
RIGHT RIPARIAN ZONE (if none, enter NO)	C	C	C	C	C	C	C	C	C	C

CHANNEL VEGETATION TYPES (Use abbreviations in spot-check key)

NONE (tick as appropriate)

None	N	N	N	N	N	N	N	N	N	N
Emergent herbs										
Emergent reeds/sedges										
Floating-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (see E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1154 River LEE (NW) Mid-section grid reference if different from designated site: _____
 Date 16/5/1994 Start time: 10 25 Surveyor name J. B. GIBBONS P. HANVILLE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____
 Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☒ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☒ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

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G. LAND USE WITHIN 50m OF RIVER (Use E (≥ 33% banklength) or, if present, R or F (see notes))

	L	R		L	R
Broadleaf/deciduous woodland			Bag, marsh, fen		
Coniferous plantation			Improved/semi-improved grass		
Moorland/heath			Tidal land		
Scrub/rough pasture	E	E	Suburban/urban development	E	E

H. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 65 Right bank None ☐ Banklength % = 80

I. BANK PROFILES WITHIN 500m (Use E (≥ 33% banklength) or, if present, R or F (see notes))

	L	R		L	R
Natural/unmodified			Artificial/unmodified		
Vertical/steepcut		E	Recessed		
Vertical + toe			Reinforced - whole bank		E
Steep (> 45°)			Reinforced - top only		
Gentle			Reinforced - toe only		
Composite			Artificial two-stage		
			Poached		

J. EMBANKMENTS (tick "none" box or estimate percentage banklength (if present))

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

K. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (Tick one box per bank)

	Left	Right		None	Present	E
None			Shading of channel			
Isolated/scattered			Overhanging boughs			
Regularly spaced, single			Exposed bank side roots			
Occasional clumps			Underwater tree roots			
Semi-continuous			Fallen trees			
Continuous			Woody debris			

L. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

	None	Present		None	Present	E
Waterfall/cascade			Unvegetated point bars			
Torrential flow (rapids)			Unvegetated mid-channel bars			
Laminar flow (run/glide)			Vegetated mid-channel bars			
Static flow (slack)			Mature island(s)			
Exposed bedrock			Unvegetated side bar			
Exposed boulders			Vegetated side bar			
			Artificial			

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SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width in wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (see entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
- bank modification (see entry only)	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (see entry only)	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Predominant flow type (see entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK										
Predominant bank material (see entry only)	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
- bank modification (see entry only)	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

VEGETATION STRUCTURE (to be assessed after a 10m wide section. Fill in each box with one entry only)

S = bare U = uniform S = simple C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
LEFT BANK	B	B	B	B	B	B	B	B	B	B
RIGHT BANK	B	B	B	B	B	B	B	B	B	B
RIGHT RIPARIAN ZONE (if none, enter NO)	U	U	U	U	U	U	U	U	U	U

CHANNEL VEGETATION TYPES (in riparian zone with one entry only (if B (ie. 33% banklength) or F (ie. 33% banklength))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Emergent herbs										
Emergent mudflats/beds										
Flowering-leaved (Nymph. Pot. etc.)										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use and refer to for overall assessment over 500m from E or F.

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M. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	LEFT BANK	CHANNEL	RIGHT BANK
Bank full height (m)	1.0	Bank full width (m)	12.0
Bank height if different (m)	1.25	Water width (m)	12.0
Embankment height (m)	—	Water depth (m)	0.75
Bank height if different (m)	—	Embankment height (m)	—

Bed material at site is: consolidated ☐ loose: algal growth compact, stable ☐
 unconsolidated ☐ loose: fresh clean gravel, easily dislodged, loose ☐
 unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

N. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

O. NUMBER OF ARTIFICIAL FEATURES (Use only method, then total tick "none" where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = 6 Outfalls =

P. EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

	L	R	CHANNEL
BANKS			
None			
Recessing			
Bank-erosion			
Enhancement			
Enhancement works			
State			

Q. CHOKED CHANNEL (Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐)

R. NOTABLE NUISANCE PLANT SPECIES (tick box(es)) (No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☒

S. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

A predominantly artificial channel (60%). However, lower (40%) is more natural. Some flow, backing up prior to Resv.

T. SPECIAL FEATURES (if above, adjacent habitat of high interest, including adjacent floodplain)

U. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site best)

Number (1-14) 8 Name of them Artificial

V. TIME TAKEN (Total time taken for this survey)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAMPED, THEN RETURN TO: PETER FOX, NRI NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYN 7-10-4341; ANDREW BROOKES 7-25-5712

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SWEET UP OVER 500m ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER: Use E (≥ 33% banklength) or L if present

L		R		L		R	
Broadleaf/deciduous woodland				Bog, marsh, fen			
Coniferous plantation				Improved/semi-improved grass			
Moorland/heath				Tilled land			
Scrub/rough pasture				Suburban/urban development			

K. LINEAR EXTENT OF RIPARIAN ZONE: (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☒ Banklength % =

L. BANK PROFILES WITHIN 500m: Use E (≥ 33% banklength) or L if present

L		R		L		R	
Natural/unmodified				Artificial/modified			
Vertical undercut				Resectioned			
Vertical + toe				Reinforced - whole bank			
Step (> 45°)				Reinforced - top only			
Grills				Reinforced - toe only			
Composites				Artificial two-stage			
				Poached			

M. EMBANKMENTS: (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES:

TREES (Tick one box per bank)

Left		Right		E ≥ 33%		None		Present E	
None				Shading of channel					
Isolated/scattered				Overhanging boughs					
Regularly spaced, single				Exposed bankside roots					
Occasional clumps				Underwater tree roots					
Semi-continuous				Fallen trees					
Continuous				Woody debris					

ASSOCIATED FEATURES (Tick one box per feature)

None		Present E		None		Present E	
Unvegetated mid-channel bars				Vegetated mid-channel bars			
Vegetated mid-channel bars				Meters island(s)			
Unvegetated side bar				Vegetated side bar			
Vegetated side bar				Artificial			

O. NATURAL CHANNEL FEATURES: Record total number of riffles, pools and point bars

Number of Riffles =		Pools =		Unvegetated Point Bars =		Vegetated Point Bars =	
Tick one box per feature		None	Present E	None	Present E	None	Present E
Waterfall/cascade				Unvegetated mid-channel bars			
Territorial flow (rapids)				Vegetated mid-channel bars			
Laminar flow (run/slides)				Meters island(s)			
Stade flow (slack)				Unvegetated side bar			
Exposed bedrock				Vegetated side bar			
Exposed boulders				Artificial			

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DIMENSIONS AND INFLUENCES

P. CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably against a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	0.45	Bankfull width (m)	25.5	Bankfull height (m)	0.45
Bank height if different (m)		Water width (m)	25.5	Bank height if different (m)	1.0
Embanked height (m)		Water depth (m)	1.1	Embanked height (m)	

Bed material at site is: consolidated ☐ eluvial: algal growth compact, stable
unconsolidated ☐ eluvial: fresh clean gravel, easily dislodged, loose
unknown ☒ lacustrine or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Q. TRAITS: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES: Use tally method, then total: tick "none" where appropriate

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

S. EVIDENCE OF RECENT MANAGEMENT: Obvious signs: tick box(es)

BANKS		CHANNEL	
None		None	
Resectioning		Dredging	
Bank-mowing		Weed-cutting	
Enhancement		Enhancement works	

T. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES: (tick box(es) - No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE: (underline if spot check representative of site or a stretch)

Deep uniform canalized with totally artificial banks. Good stretch of channel vegetation - large patch adjacent to left bank - poplar, hazel, birch and oak.

W. SPECIAL FEATURES: (tick box(es) adjacent to right bank and indicate distance)

Common fern thicket up to 10m high

X. RIVER LYING: (tick box(es) adjacent to right bank and indicate distance)

Number (1-14) ☒ None of them ☐

Y. TIME TAKEN: 50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TELEPHONE NUMBERS: PETER FOX 7-21-3140; PAUL RAYN 7-10-3343; ANDREW BROOKES 7-15-5712

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A. BACKGROUND INFORMATION: This information is being collected separately

Altitude(m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source(km) Drift geology Platform category

B. FIELD SURVEY DETAILS: Complete all questions

Site number: 1155 River: Roding Mid-section grid reference if different from Grid Reference: TQ 44-3 644

Date: 16/6/1994 Start time: 17.20 Surveyor name: J. B. BURN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM: (tick one box only)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM: (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☒ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ("semi-natural") ☐

E. NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

P4924.7L

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29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	BR	BR	BR	BR	BR	BR	CC	CC	CC	CC
- bank modification (one entry only)	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S1	GP	S1	GP	GP	GP	GP	GP
Predominant flow type (one entry only)	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel feature(s)	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR
RIGHT BANK										
Predominant bank material (one entry only)	BR	BR	BR	BR	BR	BR	CC	CC	CC	CC
- bank modification (one entry only)	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1
- bank feature(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE: (to be assessed over a 10m wide zone). Fill in each box with one entry only

B = bank U = uniform S = simple C = complex Refer to spot-check key

	B	U	S	C	B	U	S	C	B	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	C	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S	S	S

I. CHANNEL VEGETATION TYPES: (fill in relevant boxes with one entry, use B (≥ 33% area) or L if present)

NONE (tick as appropriate)

Liverworts/mosses ☐

Emergent herbs ☐

Emergent reeds/rushes ☒

Floating-leaved ☐

Free-floating ☐

Amphibious ☒

Submerged ☐

Filamentous algae ☒

Use end column for overall assessment over 500m (use E, C, or L)

P4924.7L

2

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RIVER NAME: WATERLOO CREEK

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS: to be measured at one site on a straight uniform section, preferably across a riffle

LEFT BANK		CHANNEL		RIGHT BANK	
Bankfull height (m)	1.65	Bankfull width (m)	5.6	Bankfull height (m)	1.6
Bank height if different (m)	/	Water width (m)	4.5	Bank height if different (m)	/
Embankment height (m)	/	Water depth (m)	0.1	Embankment height (m)	/

Bed material at site is:

consolidated	<input type="checkbox"/>	chert: algal growth compact, stable
unconsolidated	<input type="checkbox"/>	chert: fresh clean gravel, easily dislodged, loose
unknown	<input type="checkbox"/>	inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; del "none" where appropriate)

None <input type="checkbox"/>	Number of	Culverts =	Weirs =	Bridges =	Outfalls =
-------------------------------	-----------	------------	---------	-----------	------------

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

BANKS	L	R	CHANNEL
None	<input type="checkbox"/>	<input type="checkbox"/>	None <input type="checkbox"/>
Reseeding	<input type="checkbox"/>	<input type="checkbox"/>	Dredging <input type="checkbox"/>
Bank-moving	<input type="checkbox"/>	<input type="checkbox"/>	Weed-cutting <input type="checkbox"/>
Enhancement	<input type="checkbox"/>	<input type="checkbox"/>	Enhancement works <input type="checkbox"/>

CHOKED CHANNEL (Is 33% or more of the channel over 500m choked with vegetation?) NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es) if need to estimate abundance)

Giant Hogweed <input type="checkbox"/>	Himalayan Balsam <input checked="" type="checkbox"/>	Japanese Knotweed <input type="checkbox"/>
--	--	--

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Active meadow grass in high flood banks - almost certainly reseeded in past but now with some sedge in places - good riparian zone response to better flows - some minor erosion in low flow areas

SPECIAL FEATURES (ie obvious effects on habitats of high interest; incidental sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the river)

Number (1-14) ☐ None of them ☒

TIME TAKEN

50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
HELPLINE NUMBERS: PETER FOX 7-21-3148; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994				AUG RIVER HABITAT SURVEY 1994 VERIFICATION REPORT			
A- BACKGROUND INFORMATION This information is being collected separately.							
Altitude(m) Solid geology Distance from source(km)		Slope Drift geology		Mean Annual Flow category (1-10) Planform category			
B- FIELD SURVEY DETAILS Complete all questions							
Site number: 1157 Grid Reference: TQ 627 856		River: T. of Max Dyke		Mid-section grid reference if different from designated site:			
Date: 29.5.1994		Start time: 0930		Surveyor name: JH Blackburn & R. Harrison			
Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, state _____							
Bed of river visible? No <input type="checkbox"/> partially <input checked="" type="checkbox"/> entirely <input type="checkbox"/> (tick one box)							
Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box)							
Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box)							
Site surveyed from: left bank <input type="checkbox"/> right bank <input checked="" type="checkbox"/> both banks <input type="checkbox"/> channel <input type="checkbox"/>							
C- PREDOMINANT VALLEY FORM (tick one box only)				D- PREDOMINANT CHANNEL FORM (tick one box only)			
 <input type="checkbox"/> vee <input type="checkbox"/> concave/bowl <input type="checkbox"/> stepped valley floor (terraced) <input checked="" type="checkbox"/> symmetrical <input type="checkbox"/> asymmetrical <input type="checkbox"/> gorge				<ul style="list-style-type: none"> <input type="checkbox"/> predominantly culverted <input type="checkbox"/> open, but bed or banks predominantly artificial (eg bank reinforcement) <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned <input checked="" type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke) <input type="checkbox"/> not artificial, but dammed <input type="checkbox"/> no obvious modification ('semi-natural') 			
E- NAVIGATION (tick one box only)							
Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/>							
F- PREDOMINANT FLOW TYPE (tick one box only)							
torrential/whitewater <input type="checkbox"/> riffle-pool <input type="checkbox"/> stable <input checked="" type="checkbox"/> step-pool cascade <input type="checkbox"/> approximately laminar <input type="checkbox"/> impounded <input type="checkbox"/>							

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RIVER HABITAT SURVEY: 1994 VERIFICATION

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TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ or site (Tick one box)

G A PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	F	E	F	A	E	A	F	E	A
- bank modification (one entry only)	R	S	R	S	A	B	A	S	R	S
- bank features(s)	N	O	N	O	I	L	I	A	N	O
CHANNEL										
Predominant channel substrate (one entry only)	C	L	S	S	C	L	S	C	C	S
Predominant flow type (one entry only)	S	T	S	S	S	S	S	S	S	S
- channel modification(s)	R	S	A	S	A	I	I	S	S	S
- channel feature(s)	I	L	I	L	I	I	I	I	I	I
RIGHT BANK										
Predominant bank material (one entry only)	E	A	E	A	S	S	S	S	F	A
- bank modification (one entry only)	R	S	R	S	A	A	A	A	S	S
- bank feature(s)	N	O	I	L	I	A	I	A	N	O

H VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bare U = uniform S = sedge C = complex Refer to spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT RIPARIAN ZONE (if none, enter NO)	C	S	S	S	S	S	S	S	S	S
LEFT BANK	S	C	S	S	S	S	S	S	S	S
RIGHT BANK	S	S	S	S	S	S	S	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S

I LUSH CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (< 33% cover) or G (Green))

	1	2	3	4	5	6	7	8	9	10
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs					V		V	V	V	V
Emergent sedges/reeds										V
Floating-leaved		V		V						V
Free-floating	V	V	V	V	E		V		V	V
Amphibious				V					V	V
Submerged		V	V	V	V	V	E	V	E	V

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS Complete all questions

Site number: 12-27 River Bouquet Mid-section grid reference if different from designated site: SL47547
 Date 23/4/1994 Start time: 0915 Surveyor name: A.M. Reynolds, RICHARD FAIRLOUGH

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ predominantly culverted ☐
☐ concave/bowl ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐
☐ stepped valley floor (terraced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐
☐ symmetrical ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐
☒ asymmetrical ☐ not artificial, but dammed ☐
☐ gorge ☒ no obvious modification ('semi-natural') ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

E. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☒ dry
☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

F. SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	PC	PC	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CHANNEL	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant channel substrate (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Predominant flow type (one entry only)	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
- channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
- channel features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
RIGHT BANK	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	NO	NO	NO	PC	PC	NO	NO	NO	NO	NO
- bank features(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach; fill in each box, tick one entry only)

B = bare U = uniform S = single C = complex Refer to spot-check key

	B	U	S	C
LEFT RIPARIAN ZONE (if none, enter NO)	C	C	U	NO
LEFT BANK	S	S	U	U
RIGHT BANK	S	S	U	U
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	NO

I. CHANNEL VEGETATION TYPES (tick one box only)

NONE (tick as appropriate)

	1	2	3	4	5	6	7	8	9	10
Live-herbaceous										
Emergent herbs										
Emergent reeds/bushes										
Flowering-leaved										
Free-floating										
Amphibious										
Submerged										
Filamentous algae										

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

J. LAND USE WITHIN 50m OF RIVER (Use E for 31% banklength or V if present)

	L	R
Broadleaf/mixed woodland		
Coniferous plantation		
Moorland/heath		
Scrub/rough pasture		
Suburban/urban development		

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 50m (Use E for 31% banklength or V if present)

	L	R
Natural/unmodified		
Vertical/undrained		
Vertical + toe		
Slope (>45°)		
Gentle		
Composite		
Artificial/unmodified		
Reinforced - whole bank		
Reinforced - top only		
Reinforced - toe only		
Artificial toe-stage		
Poached		

M. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

N. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

	Left	Right
None		
Isolated/scattered		
Regularly spaced, single		
Occasional clumps		
Semi-continuous		
Continuous		

ASSOCIATED FEATURES (tick one box per feature)

	None	Present
Shading of channel		
Overhanging boughs		
Exposed bankside roots		
Under-ster tree roots		
Fallen trees		
Woody debris		

O. NATURAL CHANNEL FEATURES (tick one box per feature)

	None	Present
Waterfall/cascade		
Torrential flow (rapids)		
Laminar flow (run/glide)		
Static flow (slack)		
Exposed bedrock		
Exposed boulders		
Unvegetated mid-channel bars		
Vegetated mid-channel bars		
Isolated island(s)		
Unvegetated side bar		
Vegetated side bar		
Artificial		

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

	CHANNEL	RIGHT BANK
Bank full height (m)	2.5	Bank full height (m)
Bank height if different (m)	2.5	Bank height if different (m)
Embankment height (m)	Water depth (m)	Embankment height (m)

Q. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

R. NUMBER OF ARTIFICIAL FEATURES Use tally method, then total; tick "none" where appropriate

None ☐ Culverts = _____ Weirs = _____ Bridges = 2 Outfalls = 1

S. EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick boxed)

	None	Present
BANKS		
None		
Re-sectioning		
Bank-mowing		
Enhancement		
CHANNEL		
None		
Dredging		
Weed-cutting		
Enhancement works		

T. CROOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

U. NOTABLE NUISANCE PLANT SPECIES (tick boxed)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a reach)

W. SPECIAL FEATURES (tick one box only)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN (tick one box only)

Z. CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:

PETER FOX (NORTH WEST REGION), RICHARD FAIRLOUGH (HOUSE), WARRINGTON, WA10 1JH
 (TELEPHONE NUMBERS: PETER FOX 01942 31401; FAIRLOUGH 01942 31401; ANDREW PROBERTS 01942 31401)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1158 River T. of Mid-section grid reference if different from Grid Reference: 19-152-854 Varga Creek designated site:

Date: 14.15.1994 Start time: 12.00 Surveyor name: J. Blackburn R. Amalaya

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whirlwater ☐ riffle pool ☐ step-pool cascade ☐ approximately laminar ☐ static ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

	1	2	3	4	5	6	7	8	9	10
LEFT BANK										
Predominant bank material (one entry only)	EA	EA	GA	EA	EA	CA	EA	GA	CA	CA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	112	112	112	112	112	112	112	112	112	112
CHANNEL										
Predominant channel substrate (one entry only)	S1	S1	S1	S1	S1	S1	S1	S1	S1	S1
Predominant flow type (one entry only)	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
- channel modification(s)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- channel feature(s)	112	112	112	112	112	112	112	112	112	112
RIGHT BANK										
Predominant bank material (one entry only)	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
- bank modification (one entry only)	RS	RS	RS	RS	RS	RS	RS	RS	RS	RS
- bank feature(s)	112	112	112	112	112	112	112	112	112	112
H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only										
B = bare U = uniform S = simple C = complex Refer to spot-check key										
LEFT RIPARIAN ZONE (if none, enter NO)	S	NO	S	NO	S	S	S	S	S	S
LEFT BANK	S	U	U	S	U	U	U	S	U	U
RIGHT BANK	S	S	S	S	S	C	U	S	S	S
RIGHT RIPARIAN ZONE (if none, enter NO)	S	S	S	S	S	S	S	S	S	S
I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (≥ 33% bare) or / (present))										
NONE (tick as appropriate)										
Liverworts/mosses										
Emergent herbs										
Emergent reeds/sedges	VE	VE	VE	VE	VE	C	E	F	E	E
Flowering-leaved										
re-flowering										
Willows										
reed										

Use the end column for overall assessment: 0% (all 'E') 1-25% (all 'E') 26-50% (all 'E') 51-75% (all 'E') 76-100% (all 'E')

A. BACKGROUND INFORMATION This information is being collected separately. 17-00000000

Altitude(m)	Slope	Mean Annual Flow category (1-10)
Solid geology	Drift geology	Planform category
Distance from source(km)		

B SA FIELD SURVEY DETAILS Complete all questions for each SA.

Site number: 1159 River Prittle Brook Mid-section grid reference if different from
Grid Reference: TA 882868 designated site:

Date 24.1.8.1994 Start time: 15 15 Surveyor name J. Blackburn

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C	PREDOMINANT VALLEY FORM	D	PREDOMINANT CHANNEL FORM
---	-------------------------	---	--------------------------

Q ²
vfc

□ **concordant**

□

floor (terraced)

☒ Commercial

□

D.7. PREDOMINANT CHANNEL FORM S.S.

- predominantly cultivated

* open, but bed or bank predominantly

artificial (eg bar reinforced) ☒

- open, little or no obvious reinforcement,

but resectioned and/or realigned

open, but predominantly artificially dug
for mill race, etc.

NAVIGATION (tick one box only) ☒ Yes ☐ No

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☒ torrential rain water ☒ rifle pool ☐ _____

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

CP-2 PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone) - A-50 (M)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

[illegible]

II. VEGETATION STRUCTURE (to be assessed over a 10m wide swath) Fill in each box with one entry only: (7.5)

B = bare U = uniform S = simple C = complex Refer to your check key

LEFT RIPARIAN ZONE (if none, enter NO)	C	S	L	S	S	16	U	S	S	S
LEFT BANK	B	B	B	B	B	B	S	S	S	C
RIGHT BANK	B	B	B	B	B	B	S	S	S	
RIGHT RIPARIAN ZONE (if none, enter NO)	C	S	C	S	S	NO	S	S	C	C

1. CHANNEL VEGETATION TYPES (FM to vegetation boxes with one entry; use B (2.1)S area for / (PERSON)P2

[illegible]

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

1. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Planform category _____
Distance from source (km) _____

2. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1180 River: CRAWE Mkt-section grid reference if different from designated site: _____
Grid Reference: TQ153747
Date: 16.6.1994 Start time: 3:15 Surveyor name: N. FRIEVE & B. HUTCHINSON
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box) ②
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

3. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

4. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

5. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

6. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

7. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

8. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (2-3% area) or U (greater than 3%))

NONE (tick as appropriate)

Emergent herbs ☒ UPTON MARSH

Emergent reeds/sedges ☒ SPARGANNA

Flowering-leaved ☒ TAD-3500m

Free-floating

Amphibious

Submerged ☒ SPARGANNA

Filamentous algae

9. CHANNEL VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO) LEFT BANK: U S S S C S S C RIGHT BANK: B B B S S S S S RIGHT RIPARIAN ZONE (if none, enter NO) U U U NO U U U U

10. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use B (2-3% area) or U (greater than 3%))

NONE (tick as appropriate)

Emergent herbs ☒ UPTON MARSH

Emergent reeds/sedges ☒ SPARGANNA

Flowering-leaved ☒ TAD-3500m

Free-floating

Amphibious

Submerged ☒ SPARGANNA

Filamentous algae

30 April 1984
 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 83

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TEN SPOTCHECKS (at 50m apart)

Spot check I is at: upstream end ☐ downstream end ☒ of site (Tick one box)

(G) PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)
Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| LEFT BANK: | | | | | | | | | | |
| Predominant bank material (one entry only) | CC | CC | CC | EA | EA | GA | CC | CC | EA | GA |
| - bank modification (one entry only) | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ |
| - bank feature(s) | TC | NO | NO | NO | NO | NO | NC | NC | NO | NO |
| CHANNEL: | | | | | | | | | | |
| Predominant channel substrate (one entry only) | J ₁ | AR | AL | GP | GP | GP | MC | AR | CP | GP |
| Predominant flow type (one entry only) | B ₁ | AL | AL | P ₁ | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | R ₁ | R ₁ | R ₁ | N ₁ | NO | N ₁ | R ₁ | IO | DS | |
| - channel feature(s) | TS | NO | NO | TC | NO | MC | TS | NO | NO | |
| RIGHT BANK: | | | | | | | | | | |
| Predominant bank material (one entry only) | CC | CC | CC | EA | EA | EA | CC | CC | EA | EA |
| - bank modification (one entry only) | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ | R ₁ |
| - bank feature(s) | TC | NO | NO | NO | NO | NO | NO | NO | NO | NO |

H) VEGETATION STRUCTURE (to be assessed over a 10m wide stretch). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | S | C | S | C | C | C | C | C | C | C |
|--|---|---|---|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | C | S | C | C | C | C | C | C | C |
| LEFT BANK | S | B | B | A | S | S | B | B | A | A |
| RIGHT BANK | U | C | B | B | B | B | B | B | B | B |
| RIGHT RIPARIAN ZONE (if none, enter NO) | C | C | C | C | C | C | C | C | C | C |

I) EXCHANGED VEGETATION TYPES (fill in column B only - DA one entry; F or E (2-3) max entries; G (Green) optional)

| | F | E | G |
|--------------------------------|---|---|---|
| NONE (tick as appropriate) | | | |
| Liverworts/mosses | | | |
| Emergent herbs | | | |
| Emergent reeds/sedges /in SCAZ | | | |
| Floating-leaved | | | |
| Fra-floating | | | |
| Amphibious | | | |
| Submerged | | | |
| Filamentous algae | V | V | V |

The end column for overall assessment over 500m (one E or A)

29 April 1994 **ELI RIVER HABITAT SURVEY: HSA VERIFICATION** **Page 2 of 4**

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (**Mark one box**)

PHYSICAL ATTRIBUTES (to be assessed across channel within 6' of each corner)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|--|----------------------------|---|---|---|---|---|---|---|---|----|---|
| LEFT BANK | E | N | R | R | E | N | B | A | E | C | C |
| Predominant bank material (one entry only) | E | N | R | R | E | N | B | A | E | C | C |
| - bank modification (one entry only) | N | D | R | N | N | N | N | N | N | B | B |
| - bank features(s) | S | L | B | N | S | C | N | G | S | L | J |
| CHANNEL | C | P | C | P | C | P | C | P | C | P | C |
| Predominant channel substrate (one entry only) | C | P | C | P | C | P | C | P | C | P | C |
| Predominant flow type (one entry only) | R | F | F | A | C | B | F | R | A | C | R |
| - channel modification(s) | N | D | N | N | N | N | N | N | N | N | R |
| - channel feature(s) | N | N | T | R | N | T | N | T | N | T | T |
| RIGHT BANK | F | A | C | C | E | A | E | A | E | A | C |
| Predominant bank material (one entry only) | F | A | C | C | E | A | E | A | E | A | C |
| - bank modification (one entry only) | N | D | R | N | N | N | N | N | N | N | B |
| - bank feature(s) | N | D | S | N | S | S | B | N | S | N | N |
| HSA VEGETATION STRUCTURE (to be assessed once per 6' from left bank; once every other 6' from right bank) | B | U | S | C | C | C | C | C | C | C | C |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | B | U | S | C | C | C | C | C | C | C | C |
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | N | N | N |
| LEFT BANK | S | S | S | S | S | S | S | S | S | B | B |
| RIGHT BANK | B | S | B | S | S | S | S | S | S | B | B |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | N | N |
| WATER CHANNEL VEGETATION TYPES (add in vertical boxes with one entrywise (B = bare) or (L = leaves) if present) | NONE (tick as appropriate) | ✓ | ✓ | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | | |
| Emergent herbs | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Emergent reeds/sedges | | | | | ✓ | | | ✓ | ✓ | | ✓ |
| Floating-leaved | | | | | | | | | | | |
| Free-floating | | | | | | | | | | | |
| Ambitious | | | | | ✓ | | | ✓ | ✓ | | |
| Submerged | | | | | | | | | | | |
| Filamentous algae | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Use end column for overall assessment over 500m (use E or V)

[illegible]

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1152

LAND USE WITHIN 500 M OF RIVER (tick one box per feature)

| | | | | | |
|------------------------------|--|--|--|--|--|
| Broadleaf/total woodland | | | | | |
| Coniferous plantation | | | | | |
| Woodland/heath | | | | | |
| Scrub/rough pasture | | | | | |
| Suburban/urban development | | | | | |
| Tilled land | | | | | |
| Improved/semi-improved grass | | | | | |
| Bog, marsh, fen | | | | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

| | | | | | |
|-----------|------|-----------------|------------|------|-----------------|
| Left bank | None | Banklength = 90 | Right bank | None | Banklength = 98 |
|-----------|------|-----------------|------------|------|-----------------|

BANK PROFILES WITHIN 500 M OF RIVER (tick one box per feature)

| | | | | | |
|----------------------|--|--|--|--|--|
| Natural/unmodified | | | | | |
| Vertical + toe | | | | | |
| Vertical + toe | | | | | |
| Slope (>45°) | | | | | |
| Grass | | | | | |
| Composites | | | | | |
| Artificial two-stage | | | | | |
| Poached | | | | | |

EMBANKMENTS (tick one box per feature)

| | | | | | |
|-----------|------|--------------|------------|------|--------------|
| Left bank | None | Banklength = | Right bank | None | Banklength = |
|-----------|------|--------------|------------|------|--------------|

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|-------------------------------|------|-------|--|------|-----------|
| Trees (tick one box per bank) | Left | Right | Associated Features (tick one box per feature) | None | Present E |
| None | | | Shading of channel | | |
| Isolated/scattered | | | Overhanging boughs | | |
| Regularly spaced, single | | | Exposed bankside roots | | |
| Occasional clumps | | | Underwater tree roots | | |
| Semi-continuous | | | Fallen trees | | |
| Continuous | | | Woody debris | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | |
|-------------------------|--------|------------------------------|--------------------------|
| Number of riffles = 13 | Bank = | Unvegetated Point Bars = | Vegetated Point Bars = 4 |
| Waterfall/cascade | | Unvegetated mid-channel bars | |
| Torrential flow (right) | | Vegetated mid-channel bars | |
| Laminar flow (right) | | Marsh island(s) | |
| Stasis flow (right) | | Unvegetated side bar | |
| Exposed bedrock | | Vegetated side bar | |
| Exposed boulders | | Artificial | |

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1152

BACKGROUND INFORMATION (tick one box per feature)

| | | |
|---------------------------|---------------|----------------------------------|
| Altitude (m) | Slope | Mean Annual Flow category (1-10) |
| Solid geology | Drift geology | Planform category |
| Distance from source (km) | | |

FIELD SURVEY DETAILS (tick one box per feature)

Site number: 1152 River: Darent Mid-section grid reference if different from designated site: TQ 544 742

Date: 7.1.1994 Start time: 0945 Surveyor name: J. B. P. ...

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

| | |
|------------------|--|
| vee | |
| concave/bowl | |
| stepped valley | |
| floor (terraced) | |
| symmetrical | |
| asymmetrical | |
| gorge | |

PREDOMINANT CHANNEL FORM (tick one box only)

| | |
|--|--|
| predominantly culverted | |
| open, but bed or banks predominantly artificial (eg box reinforced) | |
| open, little or no obvious reinforcement, but resectioned and/or realigned | |
| open, but predominantly artificially dug (eg: mill leat, dyke) | |
| not artificial, but dammed | |
| no obvious modification ('semi-natural') | |

IS THERE A FUNCTIONING NAVIGATION? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

| | |
|-----------------------|--|
| torrential/whitewater | |
| step-pool cascade | |
| riffle-pool | |
| approximately laminar | |
| static | |
| impounded | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. CHANNEL DIMENSIONS AND INFLUENCES

| LEFT BANK | CHANNEL | RIGHT BANK |
|----------------------------------|------------------------|----------------------------------|
| Bankfull height (m) 0.7 | Bankfull width (m) 3.2 | Bankfull height (m) 0.7 |
| Bank height if different (m) 2.0 | Water width (m) 3.1 | Bank height if different (m) 2.0 |
| Embarked height (m) - | Water depth (m) 0.1 | Embarked height (m) - |

Bed material at site is: consolidated ☐ class: silt/growth compact, stable
unconsolidated ☐ class: fresh clean gravel, easily dislodged, loose
unknown ☐ class: inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributaries within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total tick 'none' where appropriate)

| None | Number of | Culverts | Walls | Bridges | Outfalls |
|------|-----------|----------|-------|---------|----------|
| None | 0 | 0 | 0 | 1 | 4 |

EVIDENCE OF RECENT MANAGEMENT (Other signs tick one box)

| BANKS | CHANNEL |
|---------------------------------------|--|
| None <input type="checkbox"/> | None <input type="checkbox"/> |
| Resectioning <input type="checkbox"/> | Dredging <input type="checkbox"/> |
| Bank-mowing <input type="checkbox"/> | Wood-cutting <input type="checkbox"/> |
| Enhancement <input type="checkbox"/> | Enhancement works <input type="checkbox"/> |

Is 33% or more of the channel over 500m thick of silt vegetation? NO ☐ YES ☒ (N/A)

NOTABLE NUISANCE PLANT SPECIES (tick box) No tick to indicate channel is free of nuisance species

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site or a whole reach)

A predominantly (c. 100%) Artificial, straight, laminar channel
Grown on silt, some trees on RHS. Spot checks

SPECIAL FEATURES (eg obvious, adverse habitat or high current, include significant features)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS
HELPLINE NUMBERS: PETER FOX 7-21-1148; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

2. FIELD SURVEY DETAILS (Complete all sections)

Site number: 1207 River Pool Mid-section grid reference if different from designated site: TD 364 695

Date: 17/6/1994 Start time: 14:35 Surveyor name: J. BAKER-BROWN & P. HENNING

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

3. PREDOMINANT VALLEY FORM (tick one box only)

4. PREDOMINANT CHANNEL FORM (tick one box only)

5. CHANNEL CROSS-SECTION (draw cross-section of channel, with a 1m wide box)

6. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

7. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at a site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|-----------------------------------|-------------------------|-----------------------------------|
| Bankfull height (m) 0.60 | Bankfull width (m) 7.20 | Bankfull height (m) 0.60 |
| Bank height if different (m) 0.10 | Water width (m) 4.70 | Bank height if different (m) 2.40 |
| Embedded height (m) | Water depth (m) 0.25 | Embedded height (m) |

Bed material at site is: consolidated ☐ clay: algal growth resistant, stable
unconsolidated ☐ clay: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick, none, where appropriate)

None ☐ Number of Culverts = 1 Weirs = 3 Bridges = 2 Outfalls =

2. EVIDENCE OF RECENT MANAGEMENT (Other than that noted in 1.2)

| BANKS | L | R | CHANNEL |
|--------------|--------------------------|--------------------------|---------------------------------------|
| Name | <input type="checkbox"/> | <input type="checkbox"/> | Name <input type="checkbox"/> |
| Resectioning | <input type="checkbox"/> | <input type="checkbox"/> | Dredging <input type="checkbox"/> |
| Bank-moving | <input type="checkbox"/> | <input type="checkbox"/> | Wood-culking <input type="checkbox"/> |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Stake <input type="checkbox"/> |

3. CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

4. NOTABLE NUISANCE PLANT SPECIES (tick box(es) if you need to consider abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☒

5. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a whole reach)

Reaches 100m upstream of site. Channel section at top of reach is a good riffle. Low frequency of bank movement. Some small at top - majority of flow confined to main channel. Flow over riffle is well defined. Special features: (eg. obvious, adjacent habitat of high interest, localised riparian vegetation, etc.)

Large, mostly new, planted on left bank with some small, some old, planted on right bank. Some small, some old, planted on right bank.

6. RIVER TYPING (Refer to photographs of RHT DPT and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

7. TIME TAKEN 1 hour

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, 40 NORTH WEST PEG, RICHARD PARKLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-1146; PAUL RAVEN 7-16-434; ANDREW BROOKES 7-25-5111

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

1. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

2. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1209 River Darent Mid-section grid reference if different from designated site: TA 541 657

Date: 16.10.1994 Start time: 15.50 Surveyor name: J. BLACKBURN P. HENDVILLE

Are conditions affecting survey? No ☒ Yes ☐ (If yes, state:)

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

3. PREDOMINANT VALLEY FORM (tick one box only)

4. PREDOMINANT CHANNEL FORM (tick one box only)

5. PREDOMINANT FLOW TYPE (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

6. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1227

LAND USE WITHIN 500m OF RIVER (Use E (2-25% banklength) or U (present) or N (none))

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Boj, marsh, fen | | |
| Coniferous plantation | | | Improved/best-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | E |

Left bank None ☐ Banklength % = 75 Right bank None ☐ Banklength % = 95

LINEAR EXTENT OF RIPARIAN ZONE (Use E (2-25% banklength) or U (present) or N (none))

Left bank profiles within 500m (Use E (2-25% banklength) or U (present) or N (none))

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/Unmodified | | | Artificial/Unmodified | | |
| Vertical/undercut | 7 | | Recessed | | |
| Vertical + toe | 7 | | Reinforced - whole bank | | |
| Steep (> 45°) | | E | Reinforced - top only | | |
| Gentle | | E | Reinforced - toe only | | |
| Composite | | | Artificial re-steps | | |
| | | | Poached | | |

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (Tick one box per feature)

| TREES (Tick one box per bank) | | ASSOCIATED FEATURES (Tick one box per feature) | | | | |
|-------------------------------|------------|--|------------------------|--|--|--|
| None | Left Right | E 2-25% | None Present E | | | |
| Isolated/scattered | | | Shading of channel | | | |
| Regularly spaced, single | | | Overhanging boughs | | | |
| Occasional clumps | | | Exposed bankside roots | | | |
| Scrub-coarse | | | Underwater tree roots | | | |
| Continuous | | | Fallen trees | | | |
| | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

| Number of Riffles = 0 | Pools = 0 | Unvegetated Point Bars = 0 | Vegetated Point Bars = 0 |
|--------------------------|----------------|----------------------------|--------------------------|
| None Present E | None Present E | None Present E | None Present E |
| Waterfall/cascades | | | |
| Torrential flow (rapids) | | | |
| Laminar flow (run/glide) | | | |
| Stale flow (slack) | | | |
| Exposed bedrock | | | |
| Exposed boulders | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (Measure at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK | | | |
|------------------------------|---------|--------------------|------|------------------------------|------|
| Bankfull height (m) | 0.35 | Bankfull width (m) | 6.20 | Bankfull height (m) | 0.35 |
| Bank height if different (m) | 0.75 | Water width (m) | DRY | Bank height if different (m) | 0.75 |
| Embanked height (m) | | Water depth (m) | 0.0 | Embanked height (m) | |

Bed material at site is: consolidated ☐ clay: silt growth compact, stable
unconsolidated ☐ clay: fresh clean gravel, easily dislodged, loose (DRY)
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use only method, then local or none where appropriate)

None ☐ Number of Culverts = 1 Weirs = 3 Bridges = 2 Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Options: dig; tick box(es))

| BANKS | L | R | CHANNEL |
|-------------|---|---|-------------------|
| None | | | None |
| Recessing | | | Dredging |
| Bank-moving | | | Wood-casting |
| Enhancement | | | Enhancement works |

CHOKED CHANNELS (Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐)

NOTABLE NUISANCE PLANT SPECIES (tick box(es), No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

DAY WINTER BOUNCE, WEIR DRY, CHANNEL DRY

SPECIAL FEATURES (e.g. fishway, adjacent habitat of high interest, incidental sightings)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN 35 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, AREA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WAA THE
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5711

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

Page 2

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: ☐ upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width or in wide zone)

Fill in each box before moving onto II and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | BC | EA | EA | EA | EA | CL | PP | CL |
| - bank modification (one entry only) | NB | U | U | U | U | U | U | U | U | U |
| - bank features(s) | U | U | U | U | U | U | U | U | U | U |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | CO | CO | SA | CO | CO | GP | PS | GI | U | SI |
| Predominant flow type (one entry only) | RF | RF | AL | RF | RF | AL | AL | AL | AL | PS |
| - channel modification(s) | U | U | U | U | U | U | U | U | U | U |
| - channel features(s) | U | U | U | U | U | U | U | U | U | U |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | SR | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | U | U | U | U | U | U | U | U | U | U |
| - bank features(s) | U | U | U | U | U | U | U | U | U | U |
| VEGETATION STRUCTURE (to be assessed over a 10m wide reach) (Fill in each box with one entry only) | | | | | | | | | | |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter N0) | S | S | S | C | C | C | C | C | S | S |
| LEFT BANK | U | U | U | S | S | B | B | S | S | S |
| RIGHT BANK | S | S | S | U | D | B | U | U | U | S |
| RIGHT RIPARIAN ZONE (if none, enter N0) | S | S | S | S | S | S | C | C | C | S |
| CHANGED VEGETATION TYPES (fill in relevant boxes with one entry; use B (bare), U (uniform) or S (simple)) | | | | | | | | | | |
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or S)

[illegible]

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source (km) _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1259 River name: PAUL RIVER Mid-section grid reference if different from designated site: _____
Grid Reference: 55 744 76
Date: 2.1.1994 Start time: 1720 Surveyor name: PAUL HENRIKSEN
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☐ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY AND STAMPED, THEN RETURN TO PETER FOR NVA NORTH WEST REGION, RICHARD FAIRCHILD HOUSE, WASHINGTON ROAD, HILLINGDON, LONDON, N5 2NF. TELEPHONE NUMBERS: PETER 741-2144; PAUL RIVER 741-4441; ANDREW BROOKS 741-5511

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 1259

SPOT CHECK 1 IS AT: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | ND | ND | ND | ND | ND | ND | PC | ND | ND | ND |
| - bank feature(s) | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | CL | GP | GP | GP | GP | CL | CL | CL |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | PD | PD | PD |
| - channel modification(s) | ND | ND | ND | ND | ND | ND | ND | RS | RS | RS |
| - channel feature(s) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | BP | BP | EA | EA | EA |
| - bank modification (one entry only) | ND | ND | ND | ND | ND | RI | RI | RS | RS | ND |
| - bank feature(s) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

VEGETATION STRUCTURE

0 = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|----|----|----|----|---|----|
| LEFT RIPARIAN ZONE (if none, enter ND) | U | S | S | U | ND | S | ND | ND | U | U |
| LEFT BANK | U | U | U | U | U | U | U | S | S | R |
| RIGHT BANK | U | U | U | U | S | B | U | U | U | S |
| RIGHT RIPARIAN ZONE (if none, enter ND) | U | U | U | S | C | ND | ND | ND | U | S |

CHANNEL VEGETATION TYPES (tick all that apply)

NONE (tick as appropriate)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------|---|---|---|---|---|---|---|---|---|----|
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reedbedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or V)

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source (km) _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1259 River name: PAUL RIVER Mid-section grid reference if different from designated site: _____
Grid Reference: 55 744 76
Date: 2.1.1994 Start time: 1720 Surveyor name: PAUL HENRIKSEN
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☐ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 1259

SPOT CHECK 1 IS AT: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | ND | ND | ND | ND | ND | ND | PC | ND | ND | ND |
| - bank feature(s) | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | CL | GP | GP | GP | GP | CL | CL | CL |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | PD | PD | PD |
| - channel modification(s) | ND | ND | ND | ND | ND | ND | ND | RS | RS | RS |
| - channel feature(s) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | BP | BP | EA | EA | EA |
| - bank modification (one entry only) | ND | ND | ND | ND | ND | RI | RI | RS | RS | ND |
| - bank feature(s) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

VEGETATION STRUCTURE

0 = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|----|----|----|----|---|----|
| LEFT RIPARIAN ZONE (if none, enter ND) | U | S | S | U | ND | S | ND | ND | U | U |
| LEFT BANK | U | U | U | U | U | U | U | S | S | R |
| RIGHT BANK | U | U | U | U | S | B | U | U | U | S |
| RIGHT RIPARIAN ZONE (if none, enter ND) | U | U | U | S | C | ND | ND | ND | U | S |

CHANNEL VEGETATION TYPES (tick all that apply)

NONE (tick as appropriate)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------|---|---|---|---|---|---|---|---|---|----|
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reedbedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or V)

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 1

BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

FIELD SURVEY DETAILS Complete all questions

Site number: 1260 River R. 0000 Mid-section grid reference if different from designated site: _____
 Grid Reference: 578 244 65 Book _____

Date 1.1.1994 Start time: 1640 Surveyor name (NAME, INITIALS) _____

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 2

SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel width < 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | CA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | VO | NO | SC | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | EP | SI | SI | SI | SI | SI | SI | SI | SI | SI |
| Predominant flow type (one entry only) | AL | AL | PD | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | PC | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | SC | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only

B = bank U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|----|----|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | C | NO | C | S | B | S | C | S | C |
| LEFT BANK | U | S | S | C | B | S | S | S | S | S |
| RIGHT BANK | U | U | S | S | U | B | B | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | NO | C | C | S | S | S | S | S | S |

VEGETATION TYPES (fill in relevant boxes with one entry only; tick E if E 31% area or if present)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or V)

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 3

CHANNEL MEASUREMENTS (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

CHANNEL MEASUREMENTS (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

CHANNEL MEASUREMENTS (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

CHANNEL MEASUREMENTS (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SWEET-UP OVER 500m

ENTER SITE NUMBER 1267

LAND USE WITHIN 500m OF RIVER (Use 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Bag, marsh, fen | | |
| Coniferous plantation | | | Improved/seed-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/heath pasture | | | Suburban/urban development | E | |

LINEAR EXTENT OF RIPARIAN ZONE (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

Left bank None ☐ Banklength % = 60 Right bank None ☐ Banklength % =

BANK PROFILES WITHIN 500m (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/undercut | 7 | | Recessed | | |
| Vertical + toe | 7 | | Reinforced - whole bank | | |
| Steep (> 45°) | 7 | E | Reinforced - top only | | |
| Gentle | 7 | E | Reinforced - toe only | | |
| Composite | 7 | E | Artificial two-stage | | |
| | | | Peached | | |

EMBANKMENTS (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | Left | Right | | None | Present | E |
|--------------------------|------|-------|-------------------------|------|---------|---|
| Name | | | Shading of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bank side roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Semi-continuous | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

ASSOCIATED FEATURES (Tick one box per feature)

| | None | Present | E |
|-------------------------|------|---------|---|
| Shading of channel | | | |
| Overhanging boughs | | | |
| Exposed bank side roots | | | |
| Underwater tree roots | | | |
| Fallen trees | | | |
| Woody debris | | | |

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

| | Number of Riffles | Pools | Unvegetated Point Bars | Vegetated Point Bars |
|--------------------------|-------------------|-------|------------------------|----------------------|
| Waterfall/cascade | | | | |
| Terrestrial flow (rapid) | | | | |
| Laminar flow (run/glide) | | | | |
| Stable flow (slack) | | | | |
| Exposed bedrock | | | | |
| Exposed boulders | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (Measure at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK | | | |
|------------------------------|---------|--------------------|------|------------------------------|------|
| Bankfull height (m) | 0.30 | Bankfull width (m) | 3.50 | Bankfull height (m) | 0.30 |
| Bank height if different (m) | | Water width (m) | 0.0 | Bank height if different (m) | |
| Embankment height (m) | | Water depth (m) | 0.0 | Embankment height (m) | |

Bed material at site is: consolidated ☐ loose: algal growth compact, stable
unconsolidated ☒ loose: fresh clean gravel, easily dislodged, loose
unknown ☐ loose: inaccessibility or not visible (e.g. turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☒ (tick one box)

TRIBUTARIES (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Other) (tick one box)

| BANKS | L | R | CHANNEL |
|--------------|---|---|-------------------|
| None | | | None |
| Recessed | | | Dredging |
| Bank-slowing | | | Wood-cutting |
| Enhancement | | | Enhancement works |

CHOKED CHANNEL

In 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site or whole reach)

DRY WINTERING IN TIMES OF SEVERE DROUGHT WITH 2.50m (not possible to reach) CHANNEL VEGETATION APPEARING GRASSES

SPECIAL FEATURES (tick one box)

RIVER TYPE (tick one box)

Number (1-14) ☐ None of them ☒

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-311-3146; PAUL RAVEN 7-16-4343; ANDREW BROOKS 7-31-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SPOT CHECK (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

SPOT CHECK 1: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 2: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 3: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 4: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 5: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 6: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 7: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 8: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 9: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 10: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 11: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 12: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 13: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 14: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 15: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 16: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 17: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 18: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 19: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 20: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SPOT CHECK (Use 1 (1-33% banklength) or 2 (2-33% banklength) or 3 (3-33% banklength) or 4 (4-33% banklength) or 5 (5-33% banklength))

SPOT CHECK 1: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 2: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 3: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 4: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 5: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 6: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 7: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 8: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 9: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 10: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 11: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 12: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 13: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 14: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 15: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 16: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 17: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 18: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 19: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

SPOT CHECK 20: Is it: upstream end ☐ downstream end ☐ of site (tick one box)

[illegible]

29 April 1991 RIVER HABITAT SURVEY: 1994 VERIFICATION TREATMENT Page 2 of 6

TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

G. PHYSICAL ATTRIBUTES (to be assessed across channel width & in wet zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | SP | ER | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | VO | NO | R | NO | NO | NO | NO | NO | NO | NO |
| - bank features(s) | UO | NO | NO | NO | NO | NO | NO | EC | NO | UO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GT | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modifications(s) | NO | HO | NO | HO | NO | NO | NO | HO | NO | HO |
| - channel feature(s) | NO | NO | NO | HO | NO | NO | NO | JO | NO | HO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | WP | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | RS | NO | NO | R | NO | NO | NO | PO | NO |
| - bank feature(s) | UO | NO | NO | NO | YO | HJ | NO | JG | OG | HO |

H. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box with one entry only.



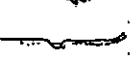
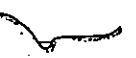


B = bare U = uniform S = simple C = complex Refer to spot-check key

| | S | S | C | NO | NO | NO | S | S | S |
|--|----|----|---|----|----|----|----|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | D | S | S | S | S | S | S |
| LEFT BANK | S | S | D | S | S | S | S | S | S |
| RIGHT BANK | S | V | S | S | B | U | U | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | C | S | NO | NO | NO | S | U |

I. CHANNEL VEGETATION TYPES (fill in relevant letters in each entry - see KEY below for definitions)

| NONE (tick as appropriate) | | | | | | | | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|
| Upriver/mosses, etc. | | | | | | | | | |
| Emergent herbs (cattails, bulrushes) | / | / | / | / | / | / | / | / | / |
| FLOATING LEAVES PERENNIALS | / | / | / | / | / | / | / | / | / |
| Emergent reeds/rushes TYPE 1 CANALS | / | / | / | / | / | / | / | / | / |
| Free-floating | | | | | | | | | |
| Amphibious | | | | | | | | | |
| Submerged | E | / | E | E | E | / | E | / | E |
| Filamentous algae | | | | | | | | | |

The end column for overall assessment over 500m (use E or /)

| RIVER HABITAT SURVEY: 1994 VERIFICATION | | | | Page 1 of 2 |
|--|--|---|--|-------------|
| 29 APRIL 1994 | | | | |
| ANALYSIS BACKGROUND INFORMATION: This information is being collected separately. | | | | |
| Altitude(m) | Slope | Mean Annual Flow category (1-10) | | |
| Solid geology | Drift geology | Planform category | | |
| Distance from source(km) | | | | |
| BIVUL FIELD SURVEY DETAILS: Complete all items. | | | | |
| Site number: 129/
Grid Reference: | River LAS NORD
SS 976376 | Mid-section grid reference if different from designated site: | | |
| Date: 30.1.8.1994 | Start time: 12.15 | Surveyor name: J. H. C. / L. A. S. V. G. | | |
| Are conditions affecting survey? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> If yes, state | | | | |
| Bed of river visible? No <input type="checkbox"/> partially <input type="checkbox"/> entirely <input type="checkbox"/> (tick one box) | | | | |
| Photograph: general character? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box) SAME (37)(?) | | | | |
| Photograph of channel measurement site? No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (tick one box) | | | | |
| Site surveyed from: left bank <input type="checkbox"/> right bank <input type="checkbox"/> both banks <input checked="" type="checkbox"/> channel <input type="checkbox"/> | | | | |
| CIPN PREDOMINANT VALLEY FORM:
(tick one box only) | | D.P. PREDOMINANT CHANNEL FORM:
(tick one box only) | | |
|  <input checked="" type="checkbox"/> vee |  <input type="checkbox"/> concave/bowl | <input type="checkbox"/> predominantly culverted | | |
|  <input type="checkbox"/> stepped valley floor (terraced) |  <input type="checkbox"/> symmetrical | <input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced) | | |
|  <input type="checkbox"/> asymmetrical |  <input type="checkbox"/> gorge | <input checked="" type="checkbox"/> open, little or no obvious reinforcement, but rescaled and/or realigned | | |
| | | <input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke) | | |
| | | <input type="checkbox"/> not artificial, but dammed | | |
| | | <input type="checkbox"/> no obvious modification ("semi-natural") | | |
| NAVIGATION (tick one box only) | | | | |
| Is there a functioning navigation? No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Don't know <input type="checkbox"/> | | | | |
| PREDOMINANT FLOW TYPE (tick one box only) | | | | |
| <input type="checkbox"/> torrential/whitewater | <input type="checkbox"/> riffle-pool | <input checked="" type="checkbox"/> static | | |
| <input type="checkbox"/> step-pool cascade | <input type="checkbox"/> approximately laminar | <input type="checkbox"/> impounded | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

FIELD SURVEY DETAILS Complete all questions

Site number: 1293 River: F. Deane Mid-section grid reference if different from designated site: 57151355

Date: 30.1.6.1994 Start time: Surveyor name: Paul Henning / Richard Brown

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ yes ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE

torrential/whirlwater ☐ * riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐ *

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 6.1m of centre)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features(s) | NO | NO | NO | EC | NO | NO | EC | EC | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GA | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | SE | RF | RF | RF | RF | RF | RF | RF | RF | RF |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| VEGETATION STRUCTURE (tick one box only) | | | | | | | | | | |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| LEFT BANK | S | U | S | S | S | S | U | S | U | S |
| RIGHT BANK | S | U | S | S | U | U | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| EMERGENT VEGETATION TYPES (tick one box only) | | | | | | | | | | |
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent beds (e.g. water hyacinth, water lily) | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use and values for overall assessment over 500m (see E or F)

RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **1273**

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

| | | | | | |
|-----------------------|--------------------------|--------------------------|------------------------------|--------------------------|--------------------------|
| Broadleaved woodland | <input type="checkbox"/> | <input type="checkbox"/> | Dec. marsh, fen | <input type="checkbox"/> | <input type="checkbox"/> |
| Coniferous plantation | <input type="checkbox"/> | <input type="checkbox"/> | Improved/semi-improved grass | <input type="checkbox"/> | <input type="checkbox"/> |
| Moorland/heath | <input type="checkbox"/> | <input type="checkbox"/> | Tilled land | <input type="checkbox"/> | <input type="checkbox"/> |
| Scrub/rough pasture | <input type="checkbox"/> | <input type="checkbox"/> | Suburban/urban development | <input type="checkbox"/> | <input type="checkbox"/> |

LINEAR EXTENT OF RIPARIAN ZONE

Left bank None ☐ Banklength % = **90** Right bank None ☐ Banklength % = **5**

BANK PROFILES WITHIN 500m (tick one box per feature)

| | | | | | |
|--------------------|--------------------------|--------------------------|-------------------------|--------------------------|--------------------------|
| Natural/unmodified | <input type="checkbox"/> | <input type="checkbox"/> | Artificial/modified | <input type="checkbox"/> | <input type="checkbox"/> |
| Vertical/undercut | <input type="checkbox"/> | <input type="checkbox"/> | Resectioned | <input type="checkbox"/> | <input type="checkbox"/> |
| Vertical + toe | <input type="checkbox"/> | <input type="checkbox"/> | Reinforced - whole bank | <input type="checkbox"/> | <input type="checkbox"/> |
| Step (> 45°) | <input type="checkbox"/> | <input type="checkbox"/> | Reinforced - top only | <input type="checkbox"/> | <input type="checkbox"/> |
| Grafs | <input type="checkbox"/> | <input type="checkbox"/> | Reinforced - toe only | <input type="checkbox"/> | <input type="checkbox"/> |
| Composites | <input type="checkbox"/> | <input type="checkbox"/> | Artificial two-rings | <input type="checkbox"/> | <input type="checkbox"/> |
| | <input type="checkbox"/> | <input type="checkbox"/> | Pierced | <input type="checkbox"/> | <input type="checkbox"/> |

ENHANCEMENTS (tick one box per feature)

Left bank None ☐ Banklength % = **100** Right bank None ☐ Banklength % = **100**

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | Staking of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Scrub-conifers | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | |
|------------------------------|--------------------------|-----------------------------------|---------------------------------|
| Number of riffles = 2 | Pools = 0 | Unvegetated Point Bars = 0 | Vegetated Point Bars = 1 |
| Tick one box per feature | None | Present | None |
| Waterfall/cascade | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated mid-channel bars |
| Turbulent flow (ripids) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Mature island(s) |
| Stable flow (slick) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial |

RIVER HABITAT SURVEY 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES

| | | |
|------------------------------|---------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bank full height (m) | Bank full width (m) | Bank full height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material at site is: consolidated ☐ chest silt/growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = **0** Weirs = **0** Bridges = **1** Outfalls = **0**

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | | | |
|------------------|--------------------------|--------------------------|-------------------|
| BANKS | L | R | CHANNEL |
| None | <input type="checkbox"/> | <input type="checkbox"/> | None |
| Resectioning | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-reinforcing | <input type="checkbox"/> | <input type="checkbox"/> | Weed-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

CHOSED CHANNEL

Is 33% or more of the channel over 500m checked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Small steep stream fast flow, reworked at one large boulder, with 40% exposed bedrock in places, but to steep, the rocks are not so significant enough to stop the flow.

SPECIAL FEATURES (tick one box per feature)

None

RIVER TYPE (tick one box per feature)

Number (1-14) ☐ Name of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
TELEPHONE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (tick one box per feature)

Altitude (m) **500** Slope **10%** Mean Annual Flow category (1-10) **10**
Soil geology **Drift geology** Platform category **10**
Distance from source (km) **10**

FIELD SURVEY DETAILS

Site number: **1274** River: **Darling** Mid-section grid reference if different from designated site: **ST 256302**
Date: **1/1/1994** Start time: **9:30** Surveyor name: **N. GRIFFIN & B. HUTCHINSON**
Are conditions affecting survey? No ☐ Yes ☐ If yes, state: **if yes, state**
Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☐ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT CHANNEL FORM (tick one box per feature)

| | |
|--|---|
| <input type="checkbox"/> vee
<input type="checkbox"/> concave/bowl
<input type="checkbox"/> stepped valley floor (terraced)
<input type="checkbox"/> symmetrical
<input type="checkbox"/> asymmetrical
<input type="checkbox"/> gorge | <input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed
<input type="checkbox"/> no obvious modification ("semi-natural") |
|--|---|

IS THERE A FUNCTIONING NAVIGATION? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

| | | |
|--|--|---|
| <input type="checkbox"/> torrential/whitewater
<input type="checkbox"/> step-pool cascade | <input type="checkbox"/> riffle-pool
<input type="checkbox"/> approximately laminar | <input type="checkbox"/> static
<input type="checkbox"/> impounded |
|--|--|---|

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION This information is being collected separately.

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1295 River T of Grid Reference: ST330341 PARRETT Mid-section grid reference if different from designated site: Date: 22/6/1994 Start time: 11:25 Surveyor name: N. ARVEE & B. HUTCHINSON Are conditions affecting survey? No ☒ Yes ☐ If yes, state: Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box) Photograph: general character? No ☐ Yes ☒ (tick one box) Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☒ DRY

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

G. SWEEP-UP OVER 500m ENTER SITE NUMBER 1295

H. LAND USE WITHIN 50m OF RIVER (tick one box only)

| | L | R | | L | R |
|------------------------|---|---|------------------------------|---|----|
| Bracken/maize woodland | | | Bog, marsh, fen | | |
| Cauliflowers/plastic | | | Improved/semi-improved grass | | EE |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

I. LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 95

J. BANK PROFILES WITHIN 50m OF RIVER (tick one box only)

| | L | R | | L | R |
|--------------------|----|---|--------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/undercut | EE | | Reinforced | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Step (> 45°) | EE | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial re-vegetation | | |
| | | | Poached | | |

K. EMBANKMENTS (tick one box only)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

L. EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

| | Left | Right |
|--------------------------|------|-------|
| None | | |
| Isolated/scattered | | |
| Regularly spaced, single | | |
| Occasional clumps | | |
| Semi-continuous | | |
| Continuous | | |

ASSOCIATED FEATURES (tick one box per feature)

| | None | Present E |
|------------------------|------|-----------|
| Shading of channel | | |
| Overhanging boughs | | |
| Exposed bankside roots | | |
| Underwater tree roots | | |
| Fallen trees | | |
| Woody debris | | |

M. NATURAL CHANNEL FEATURES

Number of riffles = 18 Pools = 7 Unvegetated Point Bars = 2 Vegetated Point Bars = 4

WATERFALL/CASCADES (tick one box per feature)

| | None | Present E |
|--------------------------|------|-----------|
| Torrential flow (rapid) | | |
| Laminar flow (run/glide) | | |
| Stale flow (shock) | | |
| Exposed bedrock | | |
| Exposed boulders | | |

UNVEGETATED MID-CHANNEL BARS (tick one box per feature)

| | None | Present E |
|-----------------------------|------|-----------|
| Unvegetated mid-channel bar | | |
| Vegetated mid-channel bar | | |
| Marsh island(s) | | |
| Unvegetated side bar | | |
| Vegetated side bar | | |
| Artificial | | |

1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

SURVEY OVER 100m

ENTER SITE NUMBER 1295

LAND USE WITHIN 50m OF RIVER (tick one box per feature)

| | | | | | |
|-----------------------|--|--|------------------------------|--|----|
| Broadleaved woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | EE |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength S = 100 Right bank None ☐ Banklength S = 40

Left bank profiles within 50m of river (tick one box per feature)

| | | | | | |
|-------------------|--|----|-------------------------|--|----|
| Natural/unaltered | | | Artificial/modified | | |
| Vertical/undercut | | | Revetment | | EE |
| Vertical + toe | | | Reinforced - whole bank | | |
| Step (> 45°) | | EE | Reinforced - top only | | |
| Grass | | EE | Reinforced - toe only | | |
| Coccolite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank None ☒ Banklength S = Right bank None ☒ Banklength S =

Left bank profiles within 50m of river (tick one box per feature)

| | | | | | |
|-------------------------------|--|--|--|--|-----------|
| Trees (tick one box per bank) | | | Associated features (tick one box per feature) | | |
| None | | | Banking of channel | | Present B |
| Isolated/scattered | | | Overhanging boughs | | |
| Regularly spaced, single | | | Exposed bankside roots | | |
| Occasional clumps | | | Underwater tree roots | | |
| Scrub-spruces | | | Fallen trees | | |
| Conifers | | | Woody debris | | |

Left bank profiles within 50m of river (tick one box per feature)

| | | | | | |
|----------------------------|--|--|------------------------------|--|-----------|
| Number of riffles | | | Channelized Point Bars | | |
| None | | | Unvegetated mid-channel bars | | Present B |
| Waterfall/cascade | | | Vegetated mid-channel bars | | |
| Temporary flow (ephemeral) | | | Islands (islands) | | |
| Laminar flow (flow/side) | | | Unvegetated side bar | | |
| Stable flow (flow) | | | Vegetated side bar | | |
| Exposed bedrock | | | Artificial | | |
| Exposed boulders | | | | | |

1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (tick one box per feature)

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1296 River: CRY Mid-section grid reference if different from designated site: ST 430 330

Date: 28/6/1994 Start time: 14:30 Surveyor name: N. GRIEVE & B. HUTCHINSON

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:


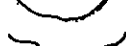

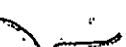
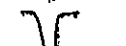

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT CHANNEL FORM (tick one box)

| | |
|---|---|
|  <input type="checkbox"/> vee | <input type="checkbox"/> predominantly culverted |
|  <input type="checkbox"/> concave/bowl | <input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced) |
|  <input type="checkbox"/> stepped valley floor (terraced) | <input type="checkbox"/> open, little or no obvious reinforcement, but resessioned and/or realigned |
|  <input type="checkbox"/> symmetrical | <input checked="" type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke) |
|  <input type="checkbox"/> asymmetrical | <input type="checkbox"/> not artificial, but dammed |
|  <input type="checkbox"/> gorge | <input type="checkbox"/> no obvious modification ('semi-natural') |

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box)

| | | | | | |
|-----------------------|--------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
| torrential/whitewater | <input type="checkbox"/> | riffle-pool | <input type="checkbox"/> | static | <input type="checkbox"/> |
| step-pool cascade | <input type="checkbox"/> | approximately laminar | <input checked="" type="checkbox"/> | impounded | <input type="checkbox"/> |

22 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

FIELD SURVEY DETAILS: Complete all questions.

Site number: 297 River: BLUE Mid-section grid reference if different from designated site: ST 543 538

Date: 21.04.1994 Start time: 16:20 Surveyor name: N. CR. IRE & B. HUTCHINSON

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 29

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORMS:

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORMS:

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPES:

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

22 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER: 297

LAND USE WITHIN 50m OF RIVER:

Broadleaf/woodland ☐ Beg. marsh, fen ☐ Coniferous plantation ☐ Improved/semi-improved grass ☐ Moorland/heath ☐ Tilled land ☐ Scrub/heath pasture ☐ Suburban/urban development ☐

Left bank None ☐ Banklength % = 90 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 50m OF RIVER:

Natural/unmodified ☐ Artificial/unmodified ☐ Vertical/unexcavated ☐ Resectioned ☐ Vertical + toe ☐ Reinforced - whole bank ☐ Steep (> 45°) ☐ Reinforced - top only ☐ Gentle ☐ Reinforced - toe only ☐ Composite ☐ Artificial two-stage ☐ Paved ☐

Left bank None ☐ Banklength % = Right bank None ☒ Banklength % =

PERCENT OF TREES AND ASSOCIATED FEATURES:

TREES (Tick one box per bank):

None ☒ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES (Tick one box per feature):

Shading of channel ☒ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

NATURAL CHANNEL FEATURES:

Number of riffles: 0

Waterfall/cascade ☐ Torrential flow (rapid) ☐ Laminar flow (run/glide) ☐ Static flow (stick) ☐ Exposed bedrock ☐ Exposed boulders ☐

Unvegetated Point Bars ☐ Vegetated Point Bars ☐

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐ Mature island(s) ☐ Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1297

LAND USE WITHIN 500m OF RIVER (tick one box per category)

| | | | |
|-----------------------|--|------------------------------|--|
| Broadleaved woodland | | Beg. marsh, fen | |
| Coniferous plantation | | Improved/semi-improved grass | |
| Moorland/heath | | Tilled land | |
| Scrub/rough pasture | | Suburban/urban development | |

Left bank None ☐ Banklength = 50 Right bank None ☐ Banklength = 100

Left bank profiles (tick one box per profile)

| | | | |
|--------------------|--|-------------------------|--|
| Natural/unmodified | | Artificial/modified | |
| Vertical/undercut | | Retained | |
| Vertical + toe | | Reinforced - whole bank | |
| Slope (> 45°) | | Reinforced - top only | |
| Grass | | Reinforced - toe only | |
| Composite | | Artificial re-usage | |
| | | Perched | |

Left bank None ☒ Banklength = 90 Right bank None ☐ Banklength = 90

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|--|------|--|-------|--|
| None | | Left | | Right | |
| Isolated/scattered | | | | | |
| Regularly spaced, single | | | | | |
| Occasional clumps | | | | | |
| Semi-continuous | | | | | |
| Continuous | | | | | |

ASSOCIATED FEATURES (Tick one box per feature)

| | | | | | |
|------------------------|--|------|--|---------|--|
| Shading of channel | | None | | Present | |
| Overhanging boughs | | | | | |
| Exposed bankside roots | | | | | |
| Underwater tree roots | | | | | |
| Fallen trees | | | | | |
| Woody debris | | | | | |

NATURAL CHANNEL FEATURES (Tick one box per feature)

| | | | | | | | |
|--------------------------|--|------|--|------------------------|--|----------------------|--|
| Number of riffles = 0 | | Push | | Unvegetated Point Bars | | Vegetated Point Bars | |
| Waterfalls/rapids | | | | | | | |
| Torrential flow (rapid) | | | | | | | |
| Laminar flow (run/glide) | | | | | | | |
| Stable flow (shallow) | | | | | | | |
| Exposed bedrock | | | | | | | |
| Exposed boulders | | | | | | | |

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Mean Annual Flow category (1-10)

Soil geology Drift geology Platform category

Distance from source (km)

Site number: 1297 River AKNAM Mid-section grid reference if different from designated site:

Date 3.11.1994 Start time: 11:00 Surveyor name: P. K. W. & R. H. W.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (Tick one box only)

| | |
|--|--|
| | <input type="checkbox"/> vee |
| | <input type="checkbox"/> concave/bowl |
| | <input type="checkbox"/> stepped valley floor (terraced) |
| | <input checked="" type="checkbox"/> symmetrical |
| | <input type="checkbox"/> asymmetrical |
| | <input type="checkbox"/> gorge |

PREDOMINANT CHANNEL FORM (Tick one box only)

| |
|---|
| <input type="checkbox"/> predominantly culverted |
| <input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced) |
| <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned |
| <input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke) |
| <input type="checkbox"/> not artificial, but dammed |
| <input checked="" type="checkbox"/> no obvious modification ('semi-natural') |

NAVIGATION (Tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (Tick one box only)

| | | | | | |
|-----------------------|--|-----------------------|--|-----------|--|
| torrential/whitewater | | riffle-pool | | static | |
| step-pool/cascade | | approximately laminar | | impounded | |

20 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 5 of 4

TEN SPOT CHECKS (to be assisted across channel, within a 1m wide zone)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assisted across channel, within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | CA | CA | EA | CA | CA | CA | CA | CA | CA | CA |
| - bank modification (one entry only) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| - bank feature(s) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | CA | CA | CA | CA | CA | CA | CA | CA | CA | CA |
| - bank modification (one entry only) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| - bank feature(s) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| Channel | | | | | | | | | | |
| Predominant channel substrate (one entry only) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| Predominant flow type (one entry only) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| - channel modification(s) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| - channel feature(s) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| VEGETATION STRUCTURE (to be assisted across channel, within a 1m wide zone) | | | | | | | | | | |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter NO) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| LEFT BANK | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| RIGHT BANK | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| RIGHT RIPARIAN ZONE (if none, enter NO) | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| VEGETATION TYPES (to be assisted across channel, within a 1m wide zone) | | | | | | | | | | |
| NOISE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1299 River: BELL C Mid-section grid reference if different from designated site:
Grid Reference: ST754365
Date: 21.6.1994 Start time: 12.55 Surveyor name: PAUL HENVILLE (RHS) AM
Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

predominantly culverted ☐
open, but bed or banks predominantly artificial (eg bar reinforced) ☐
open, little or no obvious reinforcement, but resectioned and/or realigned ☐
open, but predominantly artificially dug (eg. mill race, dyke) ☐
not artificial, but dammed ☐
no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool/cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 3m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (see entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (see entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (see entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (see entry only) | FL | FL | FL | FL | FL | FL | FL | FL | FL | FL |
| - channel modification | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel features | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (see entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (see entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (to be assessed over a 10m wide zone)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | C | C | C | C | C | C | C | C | C |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | C | C | C | C | C | C | C | C | C | C |

UPPER CHANNEL VEGETATION TYPES (fill in following boxes with one entry only (e.g. J1, J2, etc) or (N) for none)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Frag-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1297

LAND USE WITHIN 50m OF RIVER (tick one box per bank)

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/decid woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/reed-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per bank)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m (tick one box per bank)

| | L | R | | L | R |
|-----------------------|---|---|---------------------------|---|---|
| Natural/unmodified | | | Artificial/unmodified | | |
| - Vertical/unmodified | | | - Resectioned | | |
| - Vertical + toe | | | - Reinforced - whole bank | | |
| - Steep (> 45°) | | | - Reinforced - top only | | |
| - Gentle | | | - Reinforced - toe only | | |
| - Composite | | | - Artificial two-stage | | |
| | | | - Pooled | | |

EXTENSION OF TREES AND ASSOCIATED FEATURES

Left bank: None ☒ Banklength % = 100 Right bank: None ☒ Banklength % = 100

TREES (tick one box per bank)

| | Left | Right | | None | Present | E |
|--------------------------|------|-------|------------------------|------|---------|---|
| None | | | E ≥ 33% | | | |
| Isolated/scattered | | | Shading of channel | | | |
| Regularly spaced, single | | | Overhanging boughs | | | |
| Occasional clumps | | | Exposed bankside roots | | | |
| Semi-continuous | | | Underwater tree roots | | | |
| Continuous | | | Fallen trees | | | |
| | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (Record exact number of riffles, pools and point bars)

| | Number of: | Riffles | Pools | Unvegetated Point Bars | Vegetated Point Bars |
|---------------------------|------------|---------|-------|------------------------|----------------------|
| Waterfall/cascade | | | | | |
| Torrential flow (rapids) | | | | | |
| Laminar flow (run/slides) | | | | | |
| Static flow (flats) | | | | | |
| Exposed bedrock | | | | | |
| Exposed boulders | | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------|-----------------------|------------|
| Bankfull height (m) | 0.7 | Bankfull width (m) | 9.0 |
| Bank height if different (m) | 1.6 | Water width (m) | 7.5 |
| Embankment height (m) | | Water depth (m) | 0.1 |
| | | Embankment height (m) | |

Bed material at site:

consolidated ☐ clasts: silt/clay growth compact, stable
unconsolidated ☒ clasts: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use only method, then (small) box, then where appropriate)

None ☐ Number of Culverts = _____ Weirs = _____ Bridges = _____ Outfalls = _____

EVIDENCE OF RECENT MANAGEMENT (Over the last 5 years)

| | None | L | R | Channel |
|-------------------|------|---|---|---------|
| Re-sectioning | | | | |
| Bank-reworking | | | | |
| Enhancement | | | | |
| Enhancement works | | | | |

CHOKED CHANNEL (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick one box)

Great Hopwood ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use only if spot check representative of site as a whole)

SPECIAL FEATURES (tick one box)

RIVER TYPING (tick one box)

Number (1-14) ☐ None of them ☒

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 721-2140; PAUL RAYEN 718-4343; ANDREW BROOKES 725-5712

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ENTER SITE NUMBER 1299

LAND USE WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | L | R | Bag, marsh, fen | L | R |
| Coniferous plantation | E | E | Improved/semi-improved grass | | |
| Moorland/heath | E | E | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank Name ☐ Banklength = 100 Right bank Name ☐ Banklength = 100

BANK PROFILES WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/unmodified | L | R |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank Name ☐ Banklength = Right bank Name ☐ Banklength =

TEXT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| Trees | Left | Right | Associated Features | None | Present |
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

Number of riffles = 3

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------------|--------------------------|--------------------------|
| Woolf/thicket | None | Present | Unvegetated mid-channel bars | None | Present |
| Torridal flow (rapid) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Isolated island(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| Stale flow (back) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial | <input type="checkbox"/> | <input type="checkbox"/> |

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ENTER SITE NUMBER 1299

LAND USE WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | L | R | Bag, marsh, fen | L | R |
| Coniferous plantation | E | E | Improved/semi-improved grass | | |
| Moorland/heath | E | E | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank Name ☐ Banklength = 100 Right bank Name ☐ Banklength = 100

BANK PROFILES WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/unmodified | L | R |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank Name ☐ Banklength = Right bank Name ☐ Banklength =

TEXT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| Trees | Left | Right | Associated Features | None | Present |
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

Number of riffles = 3

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------------|--------------------------|--------------------------|
| Woolf/thicket | None | Present | Unvegetated mid-channel bars | None | Present |
| Torridal flow (rapid) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Isolated island(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| Stale flow (back) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial | <input type="checkbox"/> | <input type="checkbox"/> |

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ENTER SITE NUMBER 1299

LAND USE WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | L | R | Bag, marsh, fen | L | R |
| Coniferous plantation | E | E | Improved/semi-improved grass | | |
| Moorland/heath | E | E | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank Name ☐ Banklength = 100 Right bank Name ☐ Banklength = 100

BANK PROFILES WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/unmodified | L | R |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank Name ☐ Banklength = Right bank Name ☐ Banklength =

TEXT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| Trees | Left | Right | Associated Features | None | Present |
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

Number of riffles = 3

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------------|--------------------------|--------------------------|
| Woolf/thicket | None | Present | Unvegetated mid-channel bars | None | Present |
| Torridal flow (rapid) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Isolated island(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| Stale flow (back) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial | <input type="checkbox"/> | <input type="checkbox"/> |

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ENTER SITE NUMBER 1299

LAND USE WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | L | R | Bag, marsh, fen | L | R |
| Coniferous plantation | E | E | Improved/semi-improved grass | | |
| Moorland/heath | E | E | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank Name ☐ Banklength = 100 Right bank Name ☐ Banklength = 100

BANK PROFILES WITHIN 50m OF RIVERMOUTH (to 100m banklength) or 100m present

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/unmodified | L | R |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank Name ☐ Banklength = Right bank Name ☐ Banklength =

TEXT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| Trees | Left | Right | Associated Features | None | Present |
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

Number of riffles = 3

| | | | | | |
|--------------------------|--------------------------|--------------------------|------------------------------|--------------------------|--------------------------|
| Woolf/thicket | None | Present | Unvegetated mid-channel bars | None | Present |
| Torridal flow (rapid) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Isolated island(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| Stale flow (back) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial | <input type="checkbox"/> | <input type="checkbox"/> |

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BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source(km) _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 1101 River: Point Hill Stream Mid-section grid reference if different from designated site: _____
Grid Reference: SV05407 Start time: 11:15 Surveyor name: Bill Macdonald
Date: 25/4/1994 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box) 17
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 16
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)
☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)
☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION: (tick one box only)
Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)
☐ torrential/whitewater ☐ riffle/pool ☐ static ☐ stop-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK: | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL: | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | RL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | VS | NO | NO | NO | NO | NO |
| RIGHT BANK: | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE: (to be assessed at 10m wide points) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|----|----|---|---|---|---|----|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | U | NO | NO | S | S | S | S | S | S | C |
| LEFT BANK | S | S | S | S | U | U | U | S | S | S |
| RIGHT BANK | S | S | S | S | U | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | U | NO | NO | S | C | C | S | NO | S | S |

CHANNEL VEGETATION TYPES: (to be measured at 10m wide points) Fill in each box with one entry only

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Living/semi-living | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/bushes | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or V)

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

LAND USE WITHIN 50m OF RIVER: (tick one box per 50m stretch)

| | L | R |
|----------------------------|---|---|
| Broadleaf/mixed woodland | | |
| Coniferous plantation | | |
| Moorland/heath | | |
| Scrub/rough pasture | | |
| Suburban/urban development | | |

LEFT BANK PROFILES WITHIN 500m: (tick one box per 50m stretch)

| | L | R |
|--------------------|---|---|
| Natural/unmodified | | |
| Vertical/undercut | | |
| Vertical + toe | | |
| Steep (> 45°) | | |
| Glede | | |
| Composite | | |

RIGHT BANK PROFILES WITHIN 500m: (tick one box per 50m stretch)

| | L | R |
|-------------------------|---|---|
| Artificial/unmodified | | |
| Re-sectioned | | |
| Reinforced - whole bank | | |
| Reinforced - top only | | |
| Reinforced - toe only | | |
| Artificial two-stage | | |
| Post-bed | | |

EMBEDMENT: (tick one box per 50m stretch)

| | L | R |
|---------|---|---|
| None | | |
| Shallow | | |
| Deep | | |

ENTIRE EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

| | Left | Right |
|--------------------------|------|-------|
| None | | |
| Isolated/scattered | | |
| Regularly spaced, single | | |
| Occasional clumps | | |
| Semi-continuous | | |
| Continuous | | |

ASSOCIATED FEATURES: (tick one box per feature)

| | None | Present |
|------------------------|------|---------|
| Shading of channel | | |
| Overhanging boughs | | |
| Exposed bankside roots | | |
| Underwater tree roots | | |
| Fallen trees | | |
| Woody debris | | |

NATURAL CHANNEL FEATURES: (tick one box per feature)

| | None | Present |
|--------------------------|------|---------|
| Number of riffles | | |
| Waterfall/cascade | | |
| Torrential flow (rapids) | | |
| Laminar flow (run/glide) | | |
| Stale flow (dark) | | |
| Exposed bedrock | | |
| Exposed boulders | | |

VEGETATED POINT BARS: (tick one box per feature)

| | None | Present |
|------------------------------|------|---------|
| Unvegetated mid-channel bars | | |
| Vegetated mid-channel bars | | |
| Mature island(s) | | |
| Unvegetated side bar | | |
| Vegetated side bar | | |
| Artificial | | |

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES: (to be measured at one site on a straight uniform section, preferably across a riffle)

| | Channel | Right Bank |
|------------------------------|-----------------|------------------------------|
| Bankfull height (m) | 0.55 | Bankfull height (m) |
| Bank height if different (m) | 0.90 | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material at site is: consolidated ☐ loose: algal growth compact, stable ☐
unconsolidated ☒ loose: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ inaccessible or not visible (eg. turbid water) ☐

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES: (tick one box only)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 4 Outfalls = 2

EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

BANKS: None ☒ Resectioning ☐ Back-sloping ☐ Enhancement ☐

CHANNEL: None ☐ Dredging ☐ Weed-cutting ☒ Enhancement works ☐ Stone ☐

CHOICED CHANNEL: (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES: (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (tick one box only)

Small stream, runs down a steep bank, with a few trees on the left bank.

SPECIAL FEATURES: (tick one box only)

None ☐

RIVER TYPING: (tick one box only)

Number (1-14) ☐ None of them ☐

CHECK TIME TAKEN: (tick one box only)

None ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1UE
HELPLINE NUMBERS: PETER FOX 7-21-3144; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1303 River AVON Mid-section grid reference if different from designated site: _____
 Grid Reference: SU128352
 Date: 22/6/1994 Start time: 17:00 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ stage ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

G. SPOT CHECKS (to be assessed across channel within a 1m wide zone)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

H. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | | | | | | | | | | |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | G | G | G | G | G | G | G | G | G | G |
| Predominant flow type (one entry only) | A | A | A | A | A | A | A | A | A | A |
| - channel modification(s) | N | N | N | N | N | N | N | N | N | N |
| - channel feature(s) | | | | | | | | | | |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | | | | | | | | | | |

I. VEGETATION STRUCTURE (to be assessed over a 10m wide stretch) Fill in each box - (tick one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | N | N | N | N | N | N | N | N | N | N |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |

J. CHANNEL VEGETATION TYPES (to be measured at one site on a straight uniform section, preferably across a riffle)

NONE (tick as appropriate)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use one column for overall assessment over 500m (see E or J)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

K. LAND USE WITHIN 500m OF RIVER (tick one box only)

| | L | R |
|------------------------------|---|---|
| Broadleaf/mixed woodland | | |
| Coniferous plantation | | |
| Moorland/heath | | |
| Scrub/rough pasture | | |
| Improved/semi-improved grass | | |
| Tilled land | | |
| Suburban/urban development | | |

L. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 00 Right bank None ☐ Banklength % = 00

M. BANK PROFILES WITHIN 500m OF RIVER (tick one box only)

| | L | R |
|-------------------------|---|---|
| Natural/unmodified | | |
| Vertical/undercut | | |
| Vertical + toe | | |
| Steep (> 45°) | | |
| Grass | | |
| Composite | | |
| Artificial/unmodified | | |
| Re-sectioned | | |
| Reinforced - whole bank | | |
| Reinforced - top only | | |
| Reinforced - toe only | | |
| Artificial toe-ridge | | |
| Poached | | |

N. EMBANKMENTS (tick "none" box or estimate percentage banklength if present)

Left bank None ☒ Banklength % = _____ Right bank None ☒ Banklength % = _____

O. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | Left | Right | F ≥ 175 | None | Present |
|--------------------------|------|-------|---------|------|---------|
| None | | | | | |
| Isolated/scattered | | | | | |
| Regularly spaced, single | | | | | |
| Occasional clumps | | | | | |
| Semi-continuous | | | | | |
| Continuous | | | | | |
| Shading of channel | | | | | |
| Overhanging boughs | | | | | |
| Exposed bankside roots | | | | | |
| Understorey tree roots | | | | | |
| Fallen trees | | | | | |
| Windy debris | | | | | |

P. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

| | Number of Riffles | Number of Pools | Number of Point Bars |
|------------------------------|-------------------|-----------------|----------------------|
| Unvegetated Point Bars | | | |
| Vegetated Point Bars | | | |
| Unvegetated mid-channel bars | | | |
| Vegetated mid-channel bars | | | |
| Mature island(s) | | | |
| Unvegetated side bar | | | |
| Vegetated side bar | | | |
| Artificial | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

Q. CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

| | CHANNEL | RIGHT BANK |
|------------------------------|--------------|------------|
| Bankfull height (m) | <u>1.0</u> | <u>1.0</u> |
| Bankfull width (m) | <u>12.0</u> | <u>1.0</u> |
| Bank height if different (m) | <u>1.4</u> | <u>1.2</u> |
| Water width (m) | <u>11.25</u> | |
| Embankment height (m) | <u>1.25</u> | |
| Water depth (m) | | |

R. CHANNEL VEGETATION (tick one box only)

Bank material at site is: consolidated ☐ chest: algal growth compact, stable
 unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

S. TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

T. NUMBER OF ARTIFICIAL FEATURES (use tally method, then total, tick "none" where appropriate)

None ☐ Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

U. EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS: None ☐ Resectioning ☐ Bank-mowing ☐ Enhancement ☐

CHANNEL: None ☐ Dredging ☐ Weed-cutting ☒ Enhancement works ☐ Stone ☐

V. CHOSEN CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? No ☐ Yes ☒

W. NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

X. BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks, representative of site or a reach)

Classic chalk stream. Managed RH bank & weed-cut in channel. No V. diverse features but abundant vegetation & steep of woodland.

Y. SPECIAL FEATURES (eg. unusual aspects, features of high interest, individual sightings)

Small chalks goss.

Z. RIVER TYPING (tick one box only)

Number (1-14) ☐ None of them ☐

AA. TIME TAKEN (tick one box only)

Check that this form has been completed correctly, and stapled, then return to: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER **1329**

LAND USE WITHIN 500m OF RIVER (Use E for 50% banklength or U for percentage banklength)

| | | | | | |
|----------------------------|--|--|--|--|--|
| Brookside/land woodland | | | | | |
| Coniferous plantation | | | | | |
| Moorland/heath | | | | | |
| Scrub/heath pasture | | | | | |
| Suburban/rural development | | | | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick none, but or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **40** Right bank None ☐ Banklength % = **100**

BANK PROFILES WITHIN 500m (Use E for 50% banklength or U for percentage banklength)

| | | | | | |
|-------------------------|--|--|--|--|--|
| Natural/undisturbed | | | | | |
| Vertical/undisturbed | | | | | |
| Vertical + toe | | | | | |
| Steep (> 45°) | | | | | |
| Grass | | | | | |
| Composite | | | | | |
| Artificial/modified | | | | | |
| Recessed | | | | | |
| Reinforced - whole bank | | | | | |
| Reinforced - top only | | | | | |
| Reinforced - toe only | | | | | |
| Artificial two-stage | | | | | |
| Poached | | | | | |

EMBANKMENTS (tick none, but or estimate percentage banklength if present)

Left bank None ☐ Banklength % = **100** Right bank None ☐ Banklength % = **100**

EXTENT OF TREES AND ASSOCIATED FEATURES (Tick one box per feature)

| | | | | | |
|--|--|--|--|--|--|
| None | | | | | |
| Isolated/scattered | | | | | |
| Regularly spaced, single | | | | | |
| Occasional clumps | | | | | |
| Small continuous | | | | | |
| Continuous | | | | | |
| Associated Features (Tick one box per feature) | | | | | |
| Shading of channel | | | | | |
| Overhanging boughs | | | | | |
| Exposed bankside roots | | | | | |
| Underwater tree roots | | | | | |
| Fallen trees | | | | | |
| Woody debris | | | | | |

NATURAL CHANNEL FEATURES (tick none, but or estimate percentage banklength if present)

| | | | | | |
|------------------------------|--|--|--|--|--|
| Number of riffles | | | | | |
| Waterfall/cascade | | | | | |
| Thermal flow (spits) | | | | | |
| Laminar flow (run/glide) | | | | | |
| Stale flow (stuck) | | | | | |
| Exposed bedrock | | | | | |
| Exposed boulders | | | | | |
| Unvegetated mid-channel bars | | | | | |
| Vegetated mid-channel bars | | | | | |
| Mid-channel island(s) | | | | | |
| Unvegetated side bar | | | | | |
| Vegetated side bar | | | | | |
| Artificial | | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

ENTER SITE NUMBER **1329**

CHANNEL DIMENSIONS AND INFLUENCES (tick one box per measurement at one site or a straight uniform section, preferably across a riffle)

| | | | | |
|------------------------------|------------|--------------------|-------------|------------------------------|
| LEFT BANK | | CHANNEL | | RIGHT BANK |
| Bankfull height (m) | 1.3 | Bankfull width (m) | 100 | Bankfull height (m) |
| Bank height if different (m) | 1.3 | Water width (m) | 16.5 | Bank height if different (m) |
| Embankment height (m) | | Water depth (m) | 1.1 | Embankment height (m) |

Bed material at site is: consolidated ☐ chest silt/growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick 'none' where appropriate)

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

EVIDENCE OF RECENT MANAGEMENT (Observe signs; tick box(es))

| | | |
|-------------|--|-------------------|
| BANKS | | CHANNEL |
| None | | None |
| Recessing | | Dredging |
| Bank-mowing | | Weed-cutting |
| Enhancement | | Enhancement works |

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCES (Indicate if spot checks representative of site at a whole)

According to channel channel altered as part of a meadow system
but predominantly natural. Spot checks good.

SPECIAL FEATURES (tick box(es); additional features of high interest; incidental sightings)

Extensive meadow alongside main channel. (see sketch)

RIVER TYPING (Refer to photographs of site, type and location which determines the river type)

Number (1-14) ☐ None of them ☒ Similar to a **meadow stream** for a long time

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS
HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-12-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

ENTER SITE NUMBER **1329**

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) **558** Slope **1:1** Solid geology **Drift geology** Mean Annual Flow category (1-10) **Planform category**

FIELD SURVEY DETAILS (Complete on site)

Site number: **1329** River **Y40** Mid-section grid reference if different from designated site: **55841264**

Date: **29/4/1994** Start time: **08:40** Surveyor name: **Peter Fox**

Are conditions affecting survey? No ☐ Yes ☒ If yes, state: **if yes, state**

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terrace) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

NAVIGATION (tick one box)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box)

☐ torrential/whirlwater ☐ riffle-pool ☒ stage ☐ step-pool cascade ☐ approximately laminar ☐ impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

ENTER SITE NUMBER **1329**

SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 50m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | BR | EA | EA | EA | EA | EA |
| bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| bank feature(s) | SC | NO | SB | NO | NO | NO | SC | PB | NO | SC |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | BE | GP | GP | GP | CC | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AP | RE | AL | AL | AL | AL |
| channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | BR | EA | EA | EA | EA | EA |
| bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| bank feature(s) | PB | NO | NO | NO | PB | NO | PB | SC | NO | SC |

VEGETATION STRUCTURE (to be assessed over 50m wide stretch; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|---|---|---|---|---|---|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | NO |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | U | U | U | S | S | U | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | C | S | S | S | S | B | NO | NO | NO | NO |

VEGETATION TYPES (tick one box per type; use B (33% or more) or U (less than 33%))

NONE (tick as appropriate)

Liverworts/mosses ☒ **1**

Emergent beds ☒ **1**

Emergent reeds/rushes ☒ **1**

Flowering-leaved ☒ **1**

Free-floating ☒ **1**

Amphibious ☒ **1**

Submerged ☒ **1**

Filamentous algae ☒ **1**

Use end column for overall assessment over 500m (use E or U)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION: This information is being collected separately.

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS: Complete all questions

Site number: 1330 River: EXE Mid-section grid reference if different from designated site: 55962248

Date: 28/10/1994 Start time: 1640 Surveyor name: DUN, BEAULIE / RUSSELL, ADAM

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resctioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification ("semi-natural")

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

TEN SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 0.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| Predominant bank material (see entry only) | EA | BR | RC | EA | EA | BR | GA | EA | EA | EA |
| - bank feature(s) | NO | RE | NO | NO | NO | RE | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | SC | NO | NO | NO | SC | NO |
| Predominant channel substrate (see entry only) | CP | LO | CO | CO | BE | CO | CO | CO | CO | CO |
| Predominant flow type (see entry only) | AL | AL | RF | RF | AL | AL | AL | AL | AL | RF |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant bank material (see entry only) | BR | GA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (see entry only) | RE | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | SC | SC | NO | NO | NO | NO | VS |

VEGETATION STRUCTURE (to be assessed at each spot check)

Key: E = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| LEFT BANK | U | S | C | C | U | S | S | S | S | S |
| RIGHT BANK | U | S | S | S | S | S | S | S | S | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | NO | S | U | NO | U | U | U | U | U |

CHANNEL VEGETATION TYPES (tick one box only)

NONE (tick as appropriate)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|
| Living/deciduous | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/rushes | | | | | | | | | | |
| Flowering reeds | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (see E or J)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SWEEP-UP OVER 500m

ENTER SITE NUMBER: 1329

LAND USE WITHIN 50m OF RIVER (tick one box only)

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 95 Right bank None ☐ Banklength % = 75

BANK PROFILES WITHIN 500m (tick one box only)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Grass | | | Reinforced - toe only | | |
| Composite | | | Artificial revetment | | |
| | | | Poached | | |

EMBANKMENTS (tick one box only)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

| | Left | Right | ASSOCIATED FEATURES (tick one box per feature) | None | Present |
|--------------------------|------|-------|--|------|---------|
| None | | | E > 15% | | |
| Isolated/scattered | | | Shading of channel | | |
| Regularly spaced, single | | | Overhanging boughs | | |
| Occasional clumps | | | Exposed bankside roots | | |
| Semi-continuous | | | Underwater tree roots | | |
| Continuous | | | Fallen trees | | |
| | | | Woody debris | | |

NATURAL CHANNEL FEATURES

Number of Riffles = 2

| | None | Present | Unvegetated Point Bars = 2 | Vegetated Point Bars = 0 |
|---------------------------|------|---------|----------------------------|--------------------------|
| Waterfall/cascade | | | | |
| Torrential flow (rapids) | | | | |
| Laminar flow (pool/slide) | | | | |
| Static flow (slacks) | | | | |
| Exposed bedrock | | | | |
| Exposed boulders | | | | |

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CHANNEL DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site as a straight uniform section, preferably across a riffle)

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------|------------------------------|------------|
| Bankfull height (m) | 0.90 | Bankfull width (m) | 7.50 |
| Bank height if different (m) | 1.10 | Water width (m) | 5.0 |
| Bank height if different (m) | | Bank height if different (m) | 0.80 |
| Bank height if different (m) | | Bank height if different (m) | |
| Bank height if different (m) | | Bank height if different (m) | |

Bed material at site: consolidated ☐ loose silt/clay growth compact, stable ☐
unconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ inaccessibly coarse visible (eg. boulders) ☐

Location of measurements in: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☐ Number of Culverts = 0 Weirs = 2 Bridges = 3 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS: None ☒ CHANNEL: None ☐
Resectioning ☐ Dragging ☐
Bank-sloping ☐ Wood-cutting ☐
Enhancement ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCES (tick one box only)

TOP SECTION: FLOW FAST FLOWING LOW VEGETATION MEADOWS WITH TREETOPS
MID SECTION: FLOW FAST FLOWING LOW VEGETATION MEADOWS WITH TREETOPS
BOTTOM SECTION: FLOW FAST FLOWING LOW VEGETATION MEADOWS WITH TREETOPS

SPECIAL FEATURES (tick one box only)

None ☐ None of them ☐

Number (1-14) 5 None of them ☐

CHECKING TAKEN (tick one box only)

40 mins

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS
HELPLINE NUMBERS: PETER FOX 731-2144; PAUL RAYEN 731-0343; ANDREW BROOKES 735-5112

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ENTER SITE NUMBER **1370**

LAND USE WITHIN 500m OF RIVER (Use 8 (a) & (b) headings if 2 or 3 present)

| | | | | | |
|------------------------------|--|--|------------------------------|--|--|
| Broadleaf/deciduous woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilted land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = **45** Right bank None ☐ Banklength % = **90**

Left bank profiles within 500m (Use 2 (a) & (b) headings if 2 or 3 present)

| | | | | | |
|---------------------|--|--|-------------------------|--|--|
| Natural/Unmodified | | | Artificial/Modified | | |
| Vertical/horizontal | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (>45°) | | | Reinforced - top only | | |
| Gullies | | | Reinforced - toe only | | |
| Composites | | | Artificial two-stage | | |
| | | | Peached | | |

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|--------------------------|-------|--------------------------|------------------------|--------------------------|
| None | <input type="checkbox"/> | Right | <input type="checkbox"/> | E > 3% | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | | | Shading of channel | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | | | Overhanging boughs | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | | | Exposed bankside roots | <input type="checkbox"/> |
| Scrub-encroachment | <input type="checkbox"/> | | | Undercut tree roots | <input type="checkbox"/> |
| Overhanging | <input type="checkbox"/> | | | Fallen trees | <input type="checkbox"/> |
| Overhanging | <input type="checkbox"/> | | | Woody debris | <input type="checkbox"/> |

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

Left bank profiles within 500m (Use 2 (a) & (b) headings if 2 or 3 present)

| | | | |
|------------------------------|----------------------------|---|---|
| Number of Riffles = 4 | Number of Pools = 2 | Unvegetated Point Bars = <input type="checkbox"/> | Vegetated Point Bars = <input type="checkbox"/> |
| Waterfall/cascade | <input type="checkbox"/> | Unvegetated mid-channel bars | <input type="checkbox"/> |
| Torrential flow (rhythmic) | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> |
| Laminar flow (smooth/slide) | <input type="checkbox"/> | Mature island(s) | <input type="checkbox"/> |
| Stable flow (slick) | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | Artificial | <input type="checkbox"/> |

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| | | |
|------------------------------|--------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embanked height (m) | Water depth (m) | Embanked height (m) |

Bed material at site is: consolidated ☐ chest signal growth compact, stable
unconsolidated ☒ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use only methods, then total; tick none where appropriate)

| | | | | |
|--|----------------------|---------|-----------|------------|
| None <input checked="" type="checkbox"/> | Number of Culverts = | Weirs = | Bridges = | Outfalls = |
|--|----------------------|---------|-----------|------------|

EVIDENCE OF RECENT MANAGEMENT (Over the past 12 months)

| | | | |
|--------------|-------------------------------------|-------------------------------------|-------------------|
| BANKS | L | R | CHANNEL |
| None | <input checked="" type="checkbox"/> | <input type="checkbox"/> | None |
| Resectioning | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-mowing | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Weed-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) in series to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks, representative of the site or not)

SITE SELECT SITE WITH STRAIGHT CHANNEL. HIGH VELOCITY IN PLACES
SHEEP WALK WATER SECTION

SPECIAL FEATURES (If any, describe, indicate if high interest, historical, or unusual)

LARGE, MATURE, SMALL, TIGHT, LOW, ABUNDANCE, BY WILLOW, 24, 24, 24, 24

RIVER LYING (Refer to photograph of flow type and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

TIME TAKEN **50** min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 3JB
HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 APR 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

BACKGROUND & FORSTATIONS (This information is being collected separately)

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

SITE SURVEY DETAILS (Complete all questions)

Site number: **1331** River **TONE** Mid-section grid reference if different from designated site:
Grid Reference: **ST053251**

Date: **22.6.1994** Start time: **15:20** Surveyor name: **A. GRIEVE & B. HUTCHINSON**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT FLOW TYPE (Tick one box)

| | | |
|--|--|-------------------------------------|
| <input checked="" type="checkbox"/> vee | predominantly culverted | <input type="checkbox"/> |
| <input type="checkbox"/> concave/bowl | open, but bed or banks predominantly artificial (eg box reinforced) | <input type="checkbox"/> |
| <input type="checkbox"/> stepped valley floor (terraced) | open, little or no obvious reinforcement, but resectioned and/or realigned | <input type="checkbox"/> |
| <input type="checkbox"/> symmetrical | open, but predominantly artificially dug (eg mill leas, dyke) | <input type="checkbox"/> |
| <input type="checkbox"/> asymmetrical | not artificial, but dammed | <input type="checkbox"/> |
| <input type="checkbox"/> gorge | no obvious modification ('semi-natural') | <input checked="" type="checkbox"/> |

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (Tick one box)

| | | |
|-----------------------|-----------------------|-----------|
| torrential/whitewater | riffle-pool | static |
| step-pool cascade | approximately laminar | impounded |

33, 34
35

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A. BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category Distance from source(km)

B. FIELD SURVEY DETAILS Complete all questions

Site number: 1332 River: ROLL FARM Mid-section grid reference if different from designated site: 02000

Date: 2.9.16.1994 Start time: 12.30 Surveyor name: B. M. T. & P. M. / V. G. & D. G.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

C. PREDOMINANT VALLEY FORM (Tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

D. PREDOMINANT CHANNEL FORM (Tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (Tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

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G. SWEEP-UP OVER 500m ENTER SITE NUMBER: 133

H. LAND USE WITHIN 50m OF RIVER (Tick one box per bank)

| | L | R | | L | R |
|--------------------------|-------------------------------------|-------------------------------------|------------------------------|-------------------------------------|---|
| Broadleaf/mixed woodland | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Bay, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/moat pasture | <input checked="" type="checkbox"/> | | Suburban/urban development | <input checked="" type="checkbox"/> | |

I. LINEAR EXTENT OF RIPARIAN ZONE (Tick one box per bank)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

J. BANK PROFILES WITHIN 500m (Tick one box per bank)

| | L | R | | L | R |
|--------------------|-------------------------------------|-------------------------------------|-------------------------|-------------------------------------|---|
| Natural/Unmodified | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Artificial/modified | | |
| Vertical/undercut | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Resectioned | <input checked="" type="checkbox"/> | |
| Vertical + toe | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Reinforced - whole bank | <input checked="" type="checkbox"/> | |
| Steep (>45°) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Reinforced - top only | <input checked="" type="checkbox"/> | |
| Grass | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Reinforced - toe only | <input checked="" type="checkbox"/> | |
| Composite | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Artificial two-stage | <input checked="" type="checkbox"/> | |
| | | | Postbed | <input checked="" type="checkbox"/> | |

K. EMBANKMENTS (Tick one box per bank)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

L. EXTENT OF TREES AND ASSOCIATED FEATURES (Tick one box per feature)

| TREES (Tick one box per bank) | Left | Right | ASSOCIATED FEATURES (Tick one box per feature) | None | Present |
|-------------------------------|-------------------------------------|-------------------------------------|--|--------------------------|-------------------------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Filices trees | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Continuous | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

M. NATURAL CHANNEL FEATURES (Tick one box per feature)

| | None | Present |
|--------------------------|-------------------------------------|-------------------------------------|
| Number of riffles = 3 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Waterfall/cascade | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Torrential flow (rapids) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Laminar flow (run/slide) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Static flow (slack) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

N. CHANNEL FEATURES (Tick one box per feature)

| | None | Present |
|------------------------------|-------------------------------------|-------------------------------------|
| Unvegetated mid-channel bars | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Vegetated mid-channel bars | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Mudbar island(s) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Unvegetated side bar | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Vegetated side bar | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Artificial | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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ENTER SITE NUMBER **133**

LAND USE WITHIN 500M OF RIVER (tick one box per feature)

| | | | | | |
|----------------------------|---|---|----------------------------|---|---|
| Broadleaf/wetland woodland | L | R | Bog, marsh, fen | L | R |
| Coniferous plantation | | | Improved/unimproved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

| | |
|--|---|
| Left bank None <input type="checkbox"/> Banklength % = 100 | Right bank None <input type="checkbox"/> Banklength % = 100 |
|--|---|

BANK PROFILES WITHIN 500M OF RIVER (tick one box per feature)

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/modified | L | R |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick one box per feature)

| | |
|--|---|
| Left bank None <input type="checkbox"/> Banklength % = 100 | Right bank None <input type="checkbox"/> Banklength % = 100 |
|--|---|

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| TREES | Left | Right | ASSOCIATED FEATURES | None | Present |
|--------------------------|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | E 2.33% | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

OSM NATURAL CHANNEL FEATURES (tick one box per feature)

| Number of: Riffles = 5 | None | Present | Unvegetated Point Bars = 0 | Vegetated Point Bars = 1 |
|--------------------------|--------------------------|--------------------------|------------------------------|--------------------------|
| Waterfall/cascade | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated mid-channel bars | <input type="checkbox"/> |
| Torrential flow (rapid) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Mature island(s) | <input type="checkbox"/> |
| Stable flow (slack) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial | <input type="checkbox"/> |

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ENTER SITE NUMBER **133**

CHANNEL DIMENSIONS (tick one box per feature)

| LEFT BANK | CHANNEL | RIGHT BANK |
|---|-------------------------------|---|
| Bankfall height (m) 0.75 | Bankfall width (m) 5.0 | Bankfall height (m) 0.75 |
| Bank height if different (m) 2.5 | Water width (m) 3.5 | Bank height if different (m) 2.5 |
| Embedded height (m) 2.5 | Water depth (m) 0.2 | Embedded height (m) 2.5 |

Bed material at site is:

| | | |
|----------------|-------------------------------------|--|
| consolidated | <input checked="" type="checkbox"/> | chest: silt/growth compact, stable |
| unconsolidated | <input type="checkbox"/> | chest: fresh clean gravel, easily dislodged, loose |
| unknown | <input type="checkbox"/> | inaccessible or not visible (eg turbid water) |

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

Number of Artificial Features (tick one box per feature)

| | | | | |
|-------------------------------|----------------------------|-------------|-------------|--------------|
| None <input type="checkbox"/> | Number of Obstructions = 0 | Wetland = 1 | Bridges = 0 | Outfalls = 0 |
|-------------------------------|----------------------------|-------------|-------------|--------------|

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| BANKS | Left | Right | CHANNEL |
|--------------|-------------------------------------|-------------------------------------|-------------------|
| None | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | None |
| Resectioning | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-mowing | <input type="checkbox"/> | <input type="checkbox"/> | Wood-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

| | | |
|---|--|--|
| Giant Hogweed <input checked="" type="checkbox"/> | Himalayan Balsam <input checked="" type="checkbox"/> | Japanese Knotweed <input type="checkbox"/> |
|---|--|--|

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Lowland channel, mostly clay bottom, running alongside MS. Clear water & quite narrow. River zone. Probably stable.

SPECIAL FEATURES (tick one box per feature)

RIVER TYPING (tick one box per feature)

Number (1-10) ☒ Name of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3163; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

BACKGROUND INFORMATION (tick one box per feature)

| | | |
|---------------|---------------|----------------------------------|
| Altitude (m) | Slope | Mean Annual Flow category (1-10) |
| Solid geology | Drift geology | Planform category |

FIELD SURVEY DETAILS (tick one box per feature)

Site number: **1333** River: **B200** Mid-section grid reference if different from designated site: **5T 254 244**

Date: **1/6/1994** Start time: **9:15** Surveyor name: **N. GRIFFIN**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: **U. GRIFFIN**

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box per feature)

| | |
|--|---|
| <input type="checkbox"/> vee | <input type="checkbox"/> predominantly culverted |
| <input type="checkbox"/> concave/bowl | <input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced) |
| <input type="checkbox"/> stepped valley floor (terraced) | <input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned |
| <input checked="" type="checkbox"/> symmetrical | <input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke) |
| <input type="checkbox"/> asymmetrical | <input type="checkbox"/> not artificial, but dammed |
| <input type="checkbox"/> gorge | <input checked="" type="checkbox"/> no obvious modification ('semi-natural') |

BEAK NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

| | | |
|-----------------------|-----------------------|-----------|
| torrential/whitewater | riffle-pool | stage |
| step-pool cascade | approximately laminar | impounded |

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER **133**

TEN SPOT CHECKS (tick one box per feature)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (tick one box per feature)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | CL | CL | CL | CL | CL | CL | CL | CL | CL | CL |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (tick one box per feature)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | C | C | C | C | C | C | C | C | C |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | B | U | U | U | U | U | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |

CHANNEL VEGETATION TYPES (tick one box per feature)

NONE (tick one box per feature)

| | |
|-----------------------|-------------------------------------|
| None | <input checked="" type="checkbox"/> |
| Liverworts/mosses | <input type="checkbox"/> |
| Emergent herbs | <input type="checkbox"/> |
| Emergent reeds/rushes | <input type="checkbox"/> |
| Flowering-leaved | <input type="checkbox"/> |
| Free-floating | <input type="checkbox"/> |
| Amphibious | <input type="checkbox"/> |
| Submerged | <input type="checkbox"/> |
| Filamentous algae | <input type="checkbox"/> |

Use end column for overall assessment over 500m (use E or J)

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Platform category _____
 Distance from source(km) _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1334 River or stream _____ Mid-section grid reference if different from designated site: _____
 Grid Reference: _____
 Date: 15.11.1994 Start time: 16:40 Surveyor name: N. CRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ V-shaped ☐ concave/bowl ☐ stepped valley ☐ floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☒ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

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PHYSICAL ATTRIBUTES (to be assessed over a 100m reach; fill in each box with one entry only)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | SC | SC | SC | SC | SC | SC | SC | SC |
| CHANNEL | SI | SI | SI | SI | SI | SI | SI | SI | SI | SI |
| Predominant channel substrate (one entry only) | SI | SI | SI | SI | SI | SI | SI | SI | SI | SI |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | SC | SC | SC | SC | SC | SC | SC | SC |

VEGETATION STRUCTURE (to be assessed over a 100m reach; fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | U | U | U | U | U | U | U | U | U | U |
| LEFT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | U | U | U | U | U | U | U | U | U | U |

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Live/woody/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or I)

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER 1334

LAND USE WITHIN 500m OF RIVER (tick one box per 50m reach)

| | L | R | | L | R |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per 50m reach)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m (tick one box per 50m reach)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/unmodified | | |
| Vertical/pendent | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Step (>45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Pushed | | |

EMBANKMENTS (tick one box per 50m reach)

Left bank None ☒ Banklength % = 100 Right bank None ☒ Banklength % = 100

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | Left | Right | ASSOCIATED FEATURES (tick one box per feature) | None | Present |
|--------------------------|------|-------|--|------|---------|
| None | | | Shading of channel | | |
| Isolated/heathered | | | Overhanging boughs | | |
| Regularly spaced, single | | | Exposed bankside roots | | |
| Occasional clumps | | | Underwater tree roots | | |
| Semi-continuous | | | Fallen trees | | |
| Continuous | | | Woody debris | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | None | Present | | None | Present |
|--------------------------|------|---------|------------------------------|------|---------|
| Number of Riffles = 0 | | | Unvegetated Point Bars = 0 | | |
| Waterfall/cascade | | | Unvegetated mid-channel bars | | |
| Torrential flow (rapid) | | | Vegetated mid-channel bars | | |
| Laminar flow (run/slide) | | | Mature Island(s) | | |
| Static flow (stagnant) | | | Unvegetated side bar | | |
| Exposed bedrock | | | Vegetated side bar | | |
| Exposed boulders | | | Artificial | | |

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------|------------------------------|------------|
| Bankfull height (m) | 1.3 | Bankfull width (m) | 4.0 |
| Bank height if different (m) | — | Water width (m) | 3.5 |
| Embankment height (m) | — | Water depth (m) | 1.0 |
| Bankfull height (m) | 1.2 | Bank height if different (m) | — |
| Embankment height (m) | — | Embankment height (m) | — |

Bed material at site is: consolidated ☒ loose algal growth compact, stable
 macerated ☐ coarse fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use tally method; then total; tick 'none' where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 4 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | Left | Right | CHANNEL |
|--------------|------|-------|-------------------|
| None | | | None |
| Resectioning | | | Dredging |
| Bank-moving | | | Wood-cutting |
| Enhancement | | | Enhancement works |
| | | | State |

CHOKED CHANNEL (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use full, descriptive sentence; then tick 'none' where appropriate)

A small, regular channel - part of a larger man-made system, draining flat agricultural land (arable)

SPECIAL FEATURES (tick one box)

None ☐ Other ☐ (tick one box)

NUMBER (1-14) ☐ None of them ☒

TIME TAKEN 3/40/94

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, KRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 1JH. HELPLINE NUMBERS: PETER FOX 7-21-1140; PAUL RAVEN 7-10-4140; ANDREW BROOKES 7-15-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

2.2 SWEEP-UP OVER 500m

ENTER SITE NUMBER 1335

LAND USE WITHIN 50m OF RIVER (tick one box per feature)

| | | | | | |
|----------------------------|--|--|--|--|--|
| Broadleaf/woodland | | | | | |
| Coniferous plantation | | | | | |
| Moorland/heath | | | | | |
| Scrub/rough pasture | | | | | |
| Suburban/urban development | | | | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank None ☒ Banklength % =

Right bank None ☒ Banklength % =

BANK PROFILES WITHIN 500m (tick one box per feature)

| | | | | | |
|-------------------------|--|--|--|--|--|
| Natural/unmodified | | | | | |
| Vertical/undercut | | | | | |
| Vertical + toe | | | | | |
| Step (> 45°) | | | | | |
| Grade | | | | | |
| Composite | | | | | |
| Artificial/unmodified | | | | | |
| Resectioned | | | | | |
| Reinforced - whole bank | | | | | |
| Reinforced - top only | | | | | |
| Reinforced - toe only | | | | | |
| Artificial toe-rugs | | | | | |
| Poached | | | | | |

EMBANKMENTS (tick one box per feature)

Left bank None ☒ Banklength % = 100

Right bank None ☒ Banklength % = 100

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|--------------------------|--|--|--|--|--|
| None | | | | | |
| Isolated/scattered | | | | | |
| Regularly spaced, single | | | | | |
| Occasional clumps | | | | | |
| Semi-continuous | | | | | |
| Continuous | | | | | |
| Shading of channel | | | | | |
| Overhanging boughs | | | | | |
| Exposed bankside roots | | | | | |
| Underwater tree roots | | | | | |
| Fallen trees | | | | | |
| Woody debris | | | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | | | |
|------------------------------|--|--|--|--|--|
| Number of riffles = | | | | | |
| Waterfall/cascade | | | | | |
| Torrential flow (rapid) | | | | | |
| Laminar flow (run/glide) | | | | | |
| Static flow (slack) | | | | | |
| Exposed bedrock | | | | | |
| Exposed boulders | | | | | |
| Unvegetated point bars | | | | | |
| Vegetated point bars | | | | | |
| Unvegetated mid-channel bars | | | | | |
| Vegetated mid-channel bars | | | | | |
| Mature island(s) | | | | | |
| Unvegetated side bar | | | | | |
| Vegetated side bar | | | | | |
| Artificial | | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

3. CHANNEL DIMENSIONS AND INFLUENCES (measure at one site on a straight reach section, preferably across a riffle)

| | | | | |
|------------------------------|-----|--------------------|-------|------------------------------|
| LEFT BANK | | CHANNEL | | RIGHT BANK |
| Bankfull height (m) | 1.0 | Bankfull width (m) | 18.75 | Bankfull height (m) |
| Bank height if different (m) | - | Water width (m) | 17.0 | Bank height if different (m) |
| Embanked height (m) | 2.5 | Water depth (m) | 1.5 | Embanked height (m) |

Bed material at site is:

consolidated ☒ loose: fresh clean gravel, easily dislodged, loose

unconsolidated ☒ inaccessible or not visible (e.g. turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☒ Number of Culverts = Width = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | | | | |
|-------------------|--|--|--|--|
| BANKS | | | | |
| None | | | | |
| Resectioning | | | | |
| Bank-reinforcing | | | | |
| Enhancement | | | | |
| Channel | | | | |
| None | | | | |
| Dredging | | | | |
| Wood-ruging | | | | |
| Enhancement works | | | | |

CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Lowland river with embanked sides. Moderate flow, but low features. Spot check area.

SPECIAL FEATURES (tick one box per feature)

Storrie swimming meadows - visible in: Loughs

RIVER TYPE (tick one box per feature)

Number (1-14) ☐ None of them ☒

TIME TAKEN 2:25/4:15

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3146; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-35-5713

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

4. BACKGROUND INFORMATION (The information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Solid geology Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1335 River YED Mid-section grid reference if different from designated site:

Grid Reference: ST 448257

Date: 3.11.1994 Start time: 14:30 Surveyor name: N. CRIBE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box per feature)

vec concave/bowl stepped valley floor (terraced) symmetrical asymmetrical gorge

PREDOMINANT CHANNEL FORM (tick one box per feature)

predominantly culverted open, but bed or banks predominantly artificial (e.g. box reinforced) open, little or no obvious reinforcement but resectioned and/or realigned open, but predominantly artificially dug (e.g. mill leat, dyke) not artificial, but dammed no obvious modification ('semi-natural')

NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

torrential/whitewater riffle-pool step-pool cascade approximately laminar static impounded

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

5. SPOT CHECKS (tick one box per feature)

Spot check 1 is at: upstream end ☒ downstream end ☐ of the (tick one box)

PHYSICAL ATTRIBUTES (tick one box per feature)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS |
| bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | SI | SI | SI | SI | SI | SI | SI | SI | SI | SI |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | RS | RS | RS | RS | RS | RS | RS | RS | RS | RS |
| bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (tick one box per feature)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

CHANNEL VEGETATION TYPES (tick one box per feature)

NONE (tick one box per feature)

Liverworts/mosses Emergent herbs Emergent reeds/sedges Floating-leaved Free-floating Amphibious Submerged Filamentous algae

Use end column for overall assessment over 500m (tick one box per feature)

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BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Distance from source(km) Planform category

FIELD SURVEY DETAILS: Complete all questions.

Site number: 1316 River: CARY Mid-section grid reference if different from designated site: Grid Reference: ST537660

Date: 3.1.1994 Start time: 1500 Surveyor name: Phil Bevilacqua/Robert

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/box-1 ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorgo

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resessioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leas, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural')

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whilewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

SPOT CHECK 1 is at: upstream end ☐ downstream end ☒ of site (Tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 6.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | SR | EA | CL | CA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | RS | NO | PC | NO | NO | NO | RL | RS | RS | RL |
| - bank feature(s) | UO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | CC | CL | GP | GP | CO | CL | CL | CL | CL | CL |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | BR | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | UO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | RS | EA | EA | CC | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | RS | NO | NO | RI | NO | NO | RS | RS | RS | RS |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (to be assessed over a 10m wide, 10m deep zone) Fill in each box - tick one entry only

U = bare U = uniform S = simple C = complex Refer to spot-check key

| | U | U | U | U | U | U | U | U | U | U |
|---|----|---|----|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | U | NO | U | U | U | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | U | NO | U | U | U | U | U | U | U |

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only - tick one box only)

| | U | U | U | U | U | U | U | U | U | U |
|----------------------------|---|---|---|---|---|---|---|---|---|---|
| NONE (tick as appropriate) | | | | | | | | | | |
| Live-herbaceous | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or S)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (tick one box only)

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Bag, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 99 Right bank None ☐ Banklength % = 99

CHANNEL PROFILES WITHIN 500m (tick one box only)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/handcut | | | Resessioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (>45°) | | | Reinforced - top only | | |
| Grass | | | Reinforced - toe only | | |
| Composite | | | Artificial toe-stage | | |
| | | | Pitched | | |

EMBANKMENTS (tick one box only)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | Left | Right | | None | Present | E |
|--------------------------|------|-------|------------------------|------|---------|---|
| Trees | | | Associated features | | | |
| None | | | Standing of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Semi-climaxes | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | None | Present | | None | Present | E |
|--------------------------|------|---------|------------------------------|------|---------|---|
| Number of riffles = 2 | | | Unvegetated Point Bars = 0 | | | |
| Waterfall/cascade | | | Unvegetated mid-channel bars | | | |
| Torrential flow (rapids) | | | Vegetated mid-channel bars | | | |
| Laminar flow (run/glide) | | | Manure island(s) | | | |
| Steady flow (slack) | | | Unvegetated side bar | | | |
| Exposed bedrock | | | Vegetated side bar | | | |
| Exposed boulders | | | Artificial | | | |

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------|---------------------|------------|
| Bank full height (m) | 1.45 | Bank full width (m) | 6.50 |
| Bank height if different (m) | 1.00 | Water width (m) | 4.00 |
| Embankment height (m) | | Water depth (m) | 2.00 |

Bed material at site is: consolidated ☒ chosen: algal growth compact, stable
unconsolidated ☐ chosen: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total tick boxes where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

| | L | R | CHANNEL |
|-------------------|---|---|---------|
| BANKS | | | |
| None | | | |
| Resessioning | | | |
| Bank-slowing | | | |
| Enhancement | | | |
| Dredging | | | |
| Wood-cutting | | | |
| Enhancement works | | | |

IS 33% OR MORE OF THE CHANNEL OVER 500m CHECKED WITH VEGETATION? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es) to indicate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (provide a few checks representative of site at a glance)

MANAGEMENT ACTION (tick box(es) to indicate management action taken)

SPECIAL FEATURES (tick box(es) to indicate special features of high interest, incidental lighting)

RIVER TYPING (tick box(es) to indicate river type and indicate which resembles the site)

Number (1-14) ☒ 2 None of them ☐

EXTREME TAKEN (tick box(es) to indicate extreme features)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NWA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (Use E (a 1/2) a banklength or 1/2 U primary)

| | | | | | |
|-----------------------|--|--|------------------------------|--|--|
| Broadleaved woodland | | | Bag, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

EXTENT OF RIPARIAN ZONE (Use E (a 1/2) a banklength or 1/2 U primary)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

LAND BANK PROFILES WITHIN 500m (Use E (a 1/2) a banklength or 1/2 U primary)

| | | | | | |
|---------------------|--|--|-------------------------|--|--|
| Natural/undisturbed | | | Artificial/undisturbed | | |
| Vertical/steep | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Grass | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Patched | | |

EMBANKMENTS (Use E (a 1/2) a banklength or 1/2 U primary)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|--|--|--------------------|--|--|
| None | | | Isolated/scattered | | |
| Regularly spaced, single | | | Occasional clumps | | |
| Semi-continuous | | | Continuous | | |

ASSOCIATED FEATURES (Tick one box per feature)

| | | | | | |
|-----------------------|--|--|------------------------|--|--|
| E > 33% | | | Shading of channel | | |
| Overhanging boughs | | | Exposed bankside roots | | |
| Underwater tree roots | | | Fallen trees | | |
| Woody debris | | | | | |

NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

| | | | |
|--------------------------|---------|------------------------------|------------------------|
| Number of Riffles = 4 | Pools = | Unvegetated Point Bars = | Vegetated Point Bars = |
| Waters/overbank | | Unvegetated mid-channel bars | |
| Torrential flow (rapid) | | Vegetated mid-channel bars | |
| Laminar flow (run/glide) | | Mud/silt island(s) | |
| Stable flow (slack) | | Unvegetated side bar | |
| Exposed bedrock | | Vegetated side bar | |
| Exposed boulders | | Artificial | |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES (Use E (a 1/2) a banklength or 1/2 U primary)

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| | | |
|------------------------------|--------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Dead material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (Use E (a 1/2) a banklength or 1/2 U primary)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use E (a 1/2) a banklength or 1/2 U primary)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (Use E (a 1/2) a banklength or 1/2 U primary)

| | | | |
|--------------|---|---|-------------------|
| BANKS | L | R | CHANNEL |
| None | | | None |
| Resectioning | | | Dredging |
| Bank-moving | | | Weed-cutting |
| Enhancement | | | Enhancement works |

CHOKED CHANNEL (Use E (a 1/2) a banklength or 1/2 U primary)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (Use E (a 1/2) a banklength or 1/2 U primary)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use E (a 1/2) a banklength or 1/2 U primary)

SPECIAL FEATURES (Use E (a 1/2) a banklength or 1/2 U primary)

RIVER TYPE (Refer to photographs of river types and indicate which estimated the site)

Number (1-14) ☐ None of them ☐

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRLOUGH HOUSE, WASHINGTON, WAH1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-18-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Distance from source (km) Mean Annual Flow category (1-10) Platform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1337 River To Cam Mid-section grid reference if different from designated site: ST650263

Date: 3.1.1994 Start time: 1315 Surveyor name: Pam Howell/Richard Roberts

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bank reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☐ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

TEN SPOT CHECKS (at 10m spots)

Spot check 1 is at: upstream end ☐ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 6m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| - bank feature(s) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| - channel modification(s) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| - channel feature(s) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| - bank feature(s) | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| VEGETATION STRUCTURE (to be assessed over 20m wide zone, results fill in each box with one entry only) | | | | | | | | | | |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |
| CLASSIFIED VEGETATION TYPES (tick all that apply, enter E (a 1/2) a banklength or 1/2 U primary) | | | | | | | | | | |
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or U)

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

1. BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Solid geology Distance from source(km) Drift geology Mean Annual Flow category (1-10) Platform category

2. FIELD SURVEY DETAILS: Complete all questions.

Site number: 1335 River: Cole Grid Reference: ST 33948 Date: 21.4.1994 Start time: 1100 Surveyor name: Peter Fox / Richard Raven

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

3. PREDOMINANT VALLEY FORM (tick one box only)

4. PREDOMINANT CHANNEL FORM (tick one box only)

5. NAVIGATION (tick one box only)

6. PREDOMINANT FLOW TYPE (tick one box only)

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

10 SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

11. PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key.

12. VEGETATION STRUCTURE (to be assessed over a 10m wide transect. Fill in each box with one entry only)

13. CHANNEL VEGETATION TYPES (fill in appropriate boxes with one entry only)

Use end column for overall assessment over 500m (use E or F)

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 1335

14. TERRESTRIAL USE WITHIN 500m OF RIVER (tick one box per feature)

15. LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

16. BANK PROFILES WITHIN 500m OF RIVER (tick one box per feature)

17. EMBANKMENTS (tick one box per feature)

18. EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

19. NATURAL CHANNEL FEATURES (tick one box per feature)

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

20. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably sited a little upstream of any obstructions)

21. CHANNEL VEGETATION (tick one box per feature)

22. CHANNEL CHOKED (tick one box per feature)

23. NOTABLE NOISANCE PLANT SPECIES (tick one box per feature)

24. RIVER TYPING (tick one box per feature)

25. TIME TAKEN (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, WEA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3146; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

ENTER SITE NUMBER 1339

LAND USE WITHIN 500m OF RIVER (Use E for 100% bare/rock, S for 100% scrub, etc.)

| | | | | | |
|-----------------------|--|--|------------------------------|---|---|
| Broadleaved woodland | | | Reed, marsh, fen | | |
| Coniferous plantation | | | Improved/best-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/heath pasture | | | Suburban/urban development | E | ✓ |

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 95

BANK PROFILES WITHIN 500m OF RIVER (Use E for 100% bare/rock, S for 100% scrub, etc.)

| | | | | | |
|----------------------|---|---|-------------------------|---|---|
| Natural/Unmodified | L | R | Artificial/Unmodified | L | R |
| Vertical/undisturbed | ✓ | | Resectioned | | |
| Vertical + toe | ✓ | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % = 25

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|------|-------|--|------|---------|
| None | Left | Right | Associated Features (Tick one box per feature) | None | Present |
| Isolated/scattered | | ✓ | Shading of channel | ✓ | ✓ |
| Regularly spaced, single | | | Overhanging boughs | ✓ | ✓ |
| Occasional clumps | | | Exposed bankside roots | ✓ | ✓ |
| Semi-continuous | | | Underwater tree roots | ✓ | ✓ |
| Continuous | | | Fallen trees | ✓ | ✓ |
| | | | Woody debris | ✓ | ✓ |

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % = 25

EXTENT OF CHANNEL FEATURES

| | | | | |
|--------------------------|------|---------|------------------------------|------------------------|
| Number of riffles = | Left | Right | Unvegetated Point Bars = | Vegetated Point Bars = |
| Tick one box per feature | None | Present | None | Present |
| Waterfall/cascade | ✓ | | Unvegetated mid-channel bars | ✓ |
| Torrential flow (rapid) | ✓ | | Vegetated mid-channel bars | ✓ |
| Laminar flow (run/glide) | ✓ | | Marsh island(s) | ✓ |
| Stable flow (flick) | ✓ | | Unvegetated side bar | ✓ |
| Exposed bedrock | ✓ | | Vegetated side bar | ✓ |
| Exposed boulders | ✓ | | Artificial | ✓ |

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

CHANNLED DIMENSIONS (Use E for 100% bare/rock, S for 100% scrub, etc.)

| | | | | | |
|------------------------------|---------|--------------------|------|------------------------------|------|
| LEFT BANK | CHANNEL | RIGHT BANK | | | |
| Bankfull height (m) | 1.50 | Bankfull width (m) | 5.30 | Bankfull height (m) | 1.50 |
| Bank height if different (m) | 2.00 | Water width (m) | 3.0 | Bank height if different (m) | 2.05 |
| Embankment height (m) | | Water depth (m) | 0.05 | Embankment height (m) | 1.30 |

Bed material at the site: consolidated ☐ chest algal growth compact, stable
unconsolidated ☒ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

STABILISATION (Use E for 100% bare/rock, S for 100% scrub, etc.)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use E for 100% bare/rock, S for 100% scrub, etc.)

None ☐ Number of Culverts = 0 Width = 0 Bridges = 0 Outfalls = 2

EVIDENCE OF RECENT MANAGEMENT (Use E for 100% bare/rock, S for 100% scrub, etc.)

| | | | |
|--------------|---|---|-------------------|
| BANKS | L | R | CHANNEL |
| None | | | None |
| Resectioning | ✓ | | Dredging |
| Bank moving | ✓ | | Wood-cutting |
| Enhancement | ✓ | | Enhancement works |
| | | | State |

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (Use E for 100% bare/rock, S for 100% scrub, etc.)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use E for 100% bare/rock, S for 100% scrub, etc.)

SPECIAL FEATURES (Use E for 100% bare/rock, S for 100% scrub, etc.)

RIVER TYPING (Use E for 100% bare/rock, S for 100% scrub, etc.)

Number (1-14) ☐ None of them ☒

TIME TAKEN FOR SURVEY (Use E for 100% bare/rock, S for 100% scrub, etc.)

50 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1JH. HELPLINE NUMBERS: PETER FOX 7-11-1110; PAUL RAYEN 7-16-4343; ANDREW BROOKES 7-25-5712

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

SURVEY DETAILS (Complete all questions)

Site number: 1339 River (o)119 Mid-section grid reference if different from designated site:

Date: 2.1.1994 Start time: 0915 Surveyor name: P. Hume & R. Hume

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

| | |
|---|---------------------------------|
| ✓ | concave/bowl |
| | stepped valley floor (terraced) |
| | symmetrical |
| | asymmetrical |
| | gorge |

PREDOMINANT CHANNEL FORM (tick one box only)

| | |
|---|--|
| | predominantly culverted |
| | open, but bed or banks predominantly artificial (eg box reinforced) |
| | open, little or no obvious reinforcement, but resectioned and/or realigned |
| | open, but predominantly artificially dug (eg mill leat, dyke) |
| | not artificial, but dammed |
| ✓ | no obvious modification ('semi-natural') |

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

| | | | | | |
|--|-----------------------|--|-----------------------|---|-----------|
| | torrential/whitewater | | riffle-pool | | static |
| | step-pool cascade | | approximately laminar | ✓ | impounded |

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

SPOT CHECKS (Use E for 100% bare/rock, S for 100% scrub, etc.)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (Use E for 100% bare/rock, S for 100% scrub, etc.)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| Channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (Use E for 100% bare/rock, S for 100% scrub, etc.)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |

CHANNEL VEGETATION TYPES (Use E for 100% bare/rock, S for 100% scrub, etc.)

None (tick as appropriate)

| | | | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|--|--|
| Living roots/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flotap-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or S)

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BACKGROUND INFORMATION (This information is being collected separately)

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

BANK FIELD SURVEY DETAILS (Complete all questions)

Site number: 1340 River River Mid-section grid reference if different from designated site:
Grid Reference: 57921266
Date: 23.1.1994 Start time: 15:30 Surveyor name: GILL HUTCHINSON + MARCLET
Are conditions affecting survey? No ☒ Yes ☐ If yes, state:
Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)
Photograph: general character? No ☐ Yes ☒ (tick one box) (8, 9)
Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) (20)
Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee
☐ concave/bowl
☐ stepped valley floor (terraced)
☒ symmetrical
☐ asymmetrical
☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted
☐ open, but bed or banks predominantly artificial (eg box reinforced)
☐ open, little or no obvious reinforcement, but resectioned and/or realigned
☐ open, but predominantly artificially dug (eg. mill race, dyke)
☐ not artificial, but dammed
☒ no obvious modification ('semi-natural')

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater
☐ step-pool cascade
☐ riffle-pool
☒ approximately laminar
☐ static
☐ impounded

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TEN SPOT CHECKS (250m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank feature(s) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| CHANNEL | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant channel substrate (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant flow type (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - channel modification(s) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - channel feature(s) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank feature(s) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |

VEGETATION STRUCTURE (to be assessed over a 10m wide zone) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| LEFT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

CHANNEL VEGETATION TYPES (to be assessed over a 10m wide zone) Fill in each box with one entry only: B (bare), S (simple), U (uniform), C (complex)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Emergent/terrestrial | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/bulrushes | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (tick E or U)

Why? No. 111111. Edge 1 Land 2/4

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ENTER SITE NUMBER 1340

LAND USE WITHIN 500m OF RIVER (Use E (to 10% banklength) or U (percent))

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Ug. marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick, none; box of estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % = 10%

BANK PROFILES WITHIN 500m (Use E (to 10% banklength) or U (percent))

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/handcut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Grass | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Pushed | | |

EMBANKMENTS (tick, none; box of estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | Left | Right | | None | Present | E |
|--------------------------|------|-------|------------------------|------|---------|---|
| None | | | Shading of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Semi-continuous | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

ASSOCIATED FEATURES (Tick one box per feature)

| | None | Present | E |
|------------------------------|------|---------|---|
| Unvegetated mid-channel bars | | | |
| Vegetated mid-channel bars | | | |
| Mature island(s) | | | |
| Unvegetated side bar | | | |
| Vegetated side bar | | | |
| Artificial | | | |

Number of: Riffles = 2 Pools = 7 Unvegetated Point Bars = 0 Vegetated Point Bars = 1

Tick one box per feature

| | None | Present | E |
|-------------------------|------|---------|---|
| Waterfall/cascade | | | |
| Torrential flow (right) | | | |
| Laminar flow (right) | | | |
| Static flow (right) | | | |
| Exposed bedrock | | | |
| Exposed bankside | | | |

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------|---------------------|------------|
| Bank full height (m) | 0.95m | Bank full width (m) | 5.5m |
| Bank height if different (m) | 1.2m | Water width (m) | 3.5m |
| Embank height (m) | | Water depth (m) | 0.75m |
| | | Embank height (m) | 0.2m |

Bed material at site is: consolidated ☐ coarse: algal growth compact, stable
reconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total; tick, none; where appropriate)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Obvious signs: tick box(es))

| | BANKS | CHANNEL |
|----------------|-------------------------------------|-------------------------------------|
| None | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Reconstruction | <input type="checkbox"/> | <input type="checkbox"/> |
| Dredging | <input type="checkbox"/> | <input type="checkbox"/> |
| Bank-mowing | <input type="checkbox"/> | <input type="checkbox"/> |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> |

CHOKED CHANNEL (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es); tick one to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a whole reach)

Quality meandering, isolated river, running through pasture

SPECIAL FEATURES (tick box(es); tick one to estimate abundance)

ONE CONTROL GATE UNDER BRIDGE

RIVER TYPING (Refer to photograph of river type and indicate which resembles the river)

Number (1-14) ☒ None of them ☐

TIME TAKEN (H:M:S)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 **RIVER HABITAT SURVEY, 1994 VERIFICATION** Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES

| LEFT BANK | CHANNEL | RIGHT BANK |
|---|---|---|
| Bankfull height (m) <u>0.5</u> | Bankfull width (m) <u>8.7</u> | Bankfull height (m) <u>0.5</u> |
| Bank height if different (m) <u>1.3</u> | Water width (m) <u>7.3</u> | Bank height if different (m) <u>0.7</u> |
| Embanked height (m) <u>—</u> | Water depth (m) <u>1.5</u> | Embanked height (m) <u>—</u> |

Bed material or size is: ☐ consolidated ☐ cobbles; algal growth common, visible
☒ vacconsolidated ☐ chestnut fresh clean gravel, easily dislodged, loose
☐ unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (list one per row)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total ticks, none = where appropriate)

Nose ☐ Number of Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Circle signs: tick yes/no)

| BANKS | L | R | CHANNEL |
|-------------|--------------------------|-------------------------------------|-------------------|
| None | <input type="checkbox"/> | <input checked="" type="checkbox"/> | None |
| Revetting | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-mowing | <input type="checkbox"/> | <input type="checkbox"/> | Wood-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |
| | | | Stake |

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒ (Narrower than)

NOTABLE NUISANCE PLANT SPECIES (tick boxes). No tick to estimate abundance.

Giant Hogweed ☐ Himalaya Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Under 150 characters, include all characteristics of site, habitat, etc.)

Cowey River, Chappan Road, Chappan to Peter Lynn Reservoir, Durham. By house and Peter's shop. 24.7.88.

SPECIAL FEATURES (e.g. unusual habitat, riparian features, structural features)

Peter's OS Fence!

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site most closely)

Number (1-14) ☒ None of them ☐

TIME TAKEN 11.6

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 3JH
 HELPLINE NUMBERS: PETER FOX 7-21-3148; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-5713

| 29 April 1991 - RIVER HABITAT SURVEY 1991 VERIFICATION | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|--|
| TEN SPOT CHECKS (at 50m apart) | | | | | | | | | | | |
| Spot check 1 is at: upstream end <input type="checkbox"/> downstream end <input checked="" type="checkbox"/> of site (tick one box) | | | | | | | | | | | |
| (G) PHYSICAL ATTRIBUTES (to be assessed across channel within 8 m wide zone) | | | | | | | | | | | |
| Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| LEFT BANK | | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | FA | FA | EA | EA | FA | EA | EA | EA | |
| - bank modification (one entry only) | N0 | N0 | I0 | I0 | M0 | I1 | M0 | M0 | N0 | N0 | |
| - bank features() | N0 | N0 | N0 | I0 | M0 | I1 | M0 | M0 | N0 | N0 | |
| CHANNEL | | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GA | GP | GP | GP | SZ | |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL | |
| - channel modification(s) | M0 | I0 | I0 | I0 | I0 | M1 | M0 | M0 | M0 | M0 | |
| - channel features() | M0 | I0 | I0 | I0 | M0 | M0 | M0 | M0 | M0 | M0 | |
| RIGHT BANK | | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA | |
| - bank modification (one entry only) | M0 | M0 | I0 | I0 | I0 | I0 | M0 | M0 | M0 | M0 | |
| - bank features() | M0 | M0 | I0 | I0 | M0 | I0 | M0 | M0 | M0 | M0 | |
| (H) VEGETATION STRUCTURE (to be assessed along 10 m wide stretch; all in each box are entry only) | | | | | | | | | | | |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | | | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter N0) | S | N0 | M0 | N0 | N0 | I0 | U | S | M0 | S | |
| LEFT BANK | S | U | U | N | I | U | U | S | U | S | |
| RIGHT BANK | S | S | U | S | I | U | S | U | S | U | |
| RIGHT RIPARIAN ZONE (if none, enter N0) | S | S | U | I0 | N0 | N0 | S | I0 | M0 | M0 | |
| (I) CHANNEL VEGETATION TYPES (all in riparian belt; tick one entry; see A (1-10) for area) | | | | | | | | | | | |
| NONE (tick as appropriate) | | | | | | | | | | | |
| Liverwort/mosses | | | | | | | | | | ✓ | |
| Emergent herbs <i>DANIELLA BACOPA VIVAX</i> | ✓ | ✓ | ✓ | E | ✓ | E | ✓ | ✓ | ✓ | ✓ | |
| Emergent roots/sedges <i>PHALARIS</i> | ✓ | ✓ | | | ✓ | | | | | | |
| Floating-leaved | | | | | | | | | | | |
| Free-floating | | | | | | | | | | | |
| Ambiphilous | | | | | | | | | | | |
| Submerged <i>DANIELLA BACOPA VIVAX</i> | E | E | E | E | E | E | ✓ | E | ✓ | ✓ | |
| Filamentous algae | | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or ✓)

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NAME OF SITE: SWEEP-UP OVER 500m **ENTER SITE NUMBER:** 1362

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Mean Annual Flow category (1-10) _____
 Solid geology _____ Drift geology _____ Planform category _____
 Distance from source(km) _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 1362 River: RT-44 (add Mid-section grid reference if different from designated site: SH 150262)
 Date: 26.1.1994 Start time: 0900 Surveyor name: GILL, MURPHY, MURPHY, POO
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box) 2S - 26
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM: (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM: (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION: (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE: (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
 step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

NAME OF SITE: SWEEP-UP OVER 500m **ENTER SITE NUMBER:** 1362

SPOT CHECKS: (a 50m apart) (use abbreviations in spot-check key)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES: (to be assessed across channel within 0.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE: (to be assessed over a 10m wide reach) Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | U | U | U | U | U | U | U | U | U | U |
| LEFT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | U | U | U | U | U | U | U | U | U | U |

VEGETATION TYPES: (to be assessed over a 10m wide reach) Fill in each box with one entry only.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Upland/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/bushes | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 3

NAME OF SITE: SWEEP-UP OVER 500m **ENTER SITE NUMBER:** 1362

LAND USE WITHIN 50m OF RIVER: (tick one box only)

| | L | R | | L | R |
|-----------------------|---|---|------------------------------|---|---|
| Broadleaf/woodland | | | Beg. marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE: (tick one box only)

Left bank: None ☐ Banklength % = 10 Right bank: None ☐ Banklength % = 10

BANK PROFILES WITHIN 500m: (tick one box only)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificially modified | | |
| Vertical/woodcut | | | Re-sectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Pierced | | |

EMBANKMENTS: (tick one box only)

Left bank: None ☒ Banklength % = _____ Right bank: None ☒ Banklength % = _____

EXTENT OF TREES AND ASSOCIATED FEATURES: (tick one box per feature)

| | Left | Right | | None | Present | E |
|-----------------------|------|-------|------------------------|------|---------|---|
| Trees | | | Shading of channel | | | |
| Overhanging boughs | | | Exposed bankside roots | | | |
| Underwater tree roots | | | Fallen trees | | | |
| Woody debris | | | | | | |

NATURAL CHANNEL FEATURES: (tick one box per feature)

| | None | Present | E |
|---------------------------|------|---------|---|
| Number of riffles | | | |
| Waterfall/cascade | | | |
| Torrential flow (rapid) | | | |
| Laminar flow (pool/slide) | | | |
| Stable flow (slack) | | | |
| Exposed bedrock | | | |
| Exposed boulders | | | |

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NAME OF SITE: SWEEP-UP OVER 500m **ENTER SITE NUMBER:** 1362

CHANNEL DIMENSIONS: (to be measured at one site on a straight uniform section, preferably across a riffle)

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|------------|------------------------------|-------------|
| Bank full height (m) | <u>0.6</u> | Bank full width (m) | <u>10</u> |
| Bank height if different (m) | <u>0.6</u> | Bank height if different (m) | <u>0.6</u> |
| Embankment height (m) | | Water depth (m) | <u>0.25</u> |

Bed material at site is: consolidated ☐ coarse: algal growth compact, stable
 unconsolidated ☒ coarse: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES: (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES: (Use only if needed, then state: date, name, where appropriate)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT: (tick one box only)

| | L | R | | L | R |
|---------------|---|---|-------------------|---|---|
| BANKS | | | CHANNEL | | |
| Re-sectioning | | | Dredging | | |
| Bank-mowing | | | Wood-cutting | | |
| Enhancement | | | Enhancement works | | |

CHOSED CHANNEL: (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES: (tick box(es) if present, else leave blank)

Great Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE: (Indicate if spot checks representative of site at a whole)

GENERAL FEELING OF CHANNEL: RIVER WITH RAPIDS AND POOLS, BUT WITH SOME WEIR-LIKE STRUCTURES AND SOME BUILT-UP BANKS. SOME WEIR-LIKE STRUCTURES AND SOME BUILT-UP BANKS. SOME WEIR-LIKE STRUCTURES AND SOME BUILT-UP BANKS.

SPECIAL FEATURES: (tick one box only)

None ☐ (tick one box only)

RIVER TYPING: (Refer to photographs of river types and indicate which resembles the river type)

Number (1-14) ☐ None of them ☐

TIME TAKEN: (tick one box only)

None ☐ (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE
 TELEPHONE NUMBERS: PETER FOX 7-21-2148; PAUL HAYEN 7-18-4343; ANDREW BROOKS 7-23-5711

19 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER **136**

LAND USE WITHIN 500M OF RIVER (use 8 (1/2" scale) or U (1/4" scale))

| | | | | | |
|-------------------------|---|---|------------------------------|---|---|
| Broads/limited woodland | L | R | Boys, marsh, fen | L | R |
| Coniferous plantation | E | | Improved/semi-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box)

Left bank None ☐ Banklength % = **85** Right bank None ☐ Banklength % = **35**

BANK PROFILES WITHIN 500M OF RIVER (use 8 (1/2" scale) or U (1/4" scale))

| | | | | | |
|---------------------|----|---|-------------------------|---|---|
| Natural/undisturbed | L | R | Artificial/undisturbed | L | R |
| Vertical/steep | 77 | E | Recessed | | |
| Vertical + toe | 7 | | Reinforced - whole bank | | |
| Slope (> 45°) | 7 | E | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Pitched | | |

EMBANKMENTS (tick one box)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|-------------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|
| TREES (tick one box per bank) | Left | Right | ASSOCIATED FEATURES (tick one box per feature) | None | Present |
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Isolated/heather | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-coniferous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| Coniferous | <input type="checkbox"/> | <input type="checkbox"/> | Washed debris | <input type="checkbox"/> | <input type="checkbox"/> |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | | | |
|------------------------------|--------------------------|-----------------------------------|---------------------------------|--------------------------|--------------------------|
| Number of riffles = 5 | Pools = 2 | Unvegetated Point Bars = 3 | Vegetated Point Bars = 1 | | |
| Tick one box per feature | None | Present | None | Present | |
| Waterfall/whitewater | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated mid-channel bars | <input type="checkbox"/> | <input type="checkbox"/> |
| Torrential flow (rapids) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Mud island(s) | <input type="checkbox"/> | <input type="checkbox"/> |
| Stable flow (sheet) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | Artificial | <input type="checkbox"/> | <input type="checkbox"/> |

19 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER **136**

CHANNEL DIMENSIONS (measure at one site on a straight and level section, preferably across a riffle)

| | | |
|------------------------------|--------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material at site is: consolidated ☐ chert: algal growth compact, stable
unconsolidated ☐ chert: fresh clean gravel, easily dislodged, loose
unknown ☐ incompressible or not visible (e.g. turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

NOTABLE TRIBUTARIES (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box)

None ☐ Number of Culverts = **0** Weirs = **1** Bridges = **4** Outfalls = **0**

EVIDENCE OF RECENT MANAGEMENT (tick one box)

| | | | |
|--------------|--------------------------|--------------------------|-------------------|
| BANKS | L | R | CHANNEL |
| None | <input type="checkbox"/> | <input type="checkbox"/> | None |
| Recessed | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-casting | <input type="checkbox"/> | <input type="checkbox"/> | Wood-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

CHOKED CHANNEL (tick one box)

Is 35% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box)

LOW FLOW, DRYING OUT, UNUSUAL VEGETATION, WEIR, GROUND, ST. 5.5m

SPOT LIGHT SITE

SPECIAL FEATURES (tick one box)

RIVER TYPING (tick one box)

Number (1-14) ☒ None of them ☐

TIME TAKEN **35 mins**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

19 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER **136**

BACKGROUND INFORMATION (this information is to be collected separately)

Altitude (m) **559** Slope **10/15** Mean Annual Flow category (1-10) **5**

Drift geology **559** Planform category **5**

Distance from source (km) **559**

FIELD SURVEY DETAILS (Complete all questions)

Site number: **136** River: **DALCH** Mid-section grid reference if different from designated site: **559**

Date: **21/6/1994** Start time: **10/15** Surveyor name: **Peter Fox/Andrew Brooks**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: **if yes, state**

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorges ☐

PREDOMINANT CHANNEL FORM (tick one box)

predominantly culverted ☐ open, but bed or banks predominantly artificial (e.g. box reinforced) ☐ open, little or no obvious reinforcement, but recessed and/or realigned ☐ open, but predominantly artificially dug (e.g. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

19 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER **136**

SPOT CHECKS (50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (do not be affected across channel within 50m of site)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | PC | PC | NO | NO | NO | NO | NO | NO | NO | NO |
| bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | ST | ST | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | RF | RF | RF | RF | RF | RF | RF | RF |
| channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | PC | PC | NO | NO | NO | NO | NO | NO | NO | NO |
| bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (tick one box)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | |
|---|----|----|----|---|----|---|----|----|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | S | S | C | C | C | C | S |
| LEFT BANK | S | B | U | S | S | U | S | S | U |
| RIGHT BANK | U | B | S | S | U | S | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | S | NO | C | NO | S | NO | NO | U |

VEGETATION TYPES (tick one box)

NONE (tick one box)

Liverworts/mosses ☒ LIVERWORTS/MOSS FORM (tick one box)

Emergent herbs ☒

Emergent reeds/sedges ☒

Floating-leaved ☐

Free-floating ☐

Algae ☒

Submerged ☐

Filamentous algae ☒

Use end column for overall assessment over 500m (use E or J)

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION (Page 1 of 4)

ENTER SITE NUMBER **1370**

LAND USE WITHIN 50m OF RIVER (if site is in urban area, or if present, specify)

| | L | R | | L | R |
|-----------------------------|---|---|------------------------------|---|---|
| Bracken/unimproved woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/heath pasture | | | Suburban/urban development | | |

EXTENT OF RIPARIAN ZONE (if none, enter 0; if estimate percentage bank length, if present)

Left bank None ☐ Bank length % = **98** Right bank None ☐ Bank length % = **70**

BANK PROFILES WITHIN 50m OF SITE (if none, enter 0; if estimate percentage bank length, if present)

| Natural/unmodified | L | R | Artificial/modified | L | R |
|--------------------|---|---|-------------------------|---|---|
| Vertical undercut | 7 | 7 | Recessed | | |
| Vertical + toe | 7 | 7 | Reinforced - whole bank | | |
| Step (> 45°) | 7 | 7 | Reinforced - top only | | |
| Grades | 7 | 7 | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Post-holed | | |

EMBANKMENTS (if none, enter 0; if estimate percentage bank length, if present)

Left bank None ☐ Bank length % = Right bank None ☐ Bank length % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| TREES (tick one box per bank) | Left | Right | ASSOCIATED FEATURES (tick one box per feature) | None | Present |
|-------------------------------|-------------------------------------|--------------------------|--|-------------------------------------|-------------------------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Isolated/external | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Occasional clumps | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

NATURAL CHANNEL FEATURES (tick one box per feature)

| Number of riffles = 2 | Point = 3 | Unvegetated Point Bars = 1 | Vegetated Point Bars = 0 | |
|------------------------------|-------------------------------------|-----------------------------------|---------------------------------|-------------------------------------|
| Waterfalls/cascades | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unvegetated mid-channel bars | <input checked="" type="checkbox"/> |
| Terraced flow (ripids) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input checked="" type="checkbox"/> |
| Laminar flow (run/glide) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Narrow island(s) | <input checked="" type="checkbox"/> |
| Static flow (stuck) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bar | <input checked="" type="checkbox"/> |
| Exposed bedrock | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Vegetated side bar | <input checked="" type="checkbox"/> |
| Exposed boulders | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Artificial | <input checked="" type="checkbox"/> |

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION (Page 2 of 4)

CHANNEL DIMENSIONS AND INFLUENCES (if none, enter 0; if estimate, specify)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|---------|------------------------------|
| Bank full height (m) | 0.75 | Bank full height (m) |
| Bank height if different (m) | 0.90 | Bank height if different (m) |
| Embanked height (m) | 0.20 | Embanked height (m) |

Bed material at site is: consolidated ☐ chest algal growth compact, stable
unconsolidated ☒ chest fresh clean gravel, easily disturbed, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

STIPPLED TRIBUTARY WITHIN 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (if none, enter 0; if estimate, specify)

None ☐ Number of Culverts = **0** Weirs = **0** Bridges = **2** Outfalls = **0**

EVIDENCE OF RECENT MANAGEMENT (if none, enter 0; if estimate, specify)

| BANKS | L | R | CHANNEL |
|-------------|-------------------------------------|-------------------------------------|-------------------|
| None | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | None |
| Recessing | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-moving | <input type="checkbox"/> | <input type="checkbox"/> | Wind-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

CHOKED CHANNEL (if none, enter 0; if estimate, specify)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (if none, enter 0; if estimate, specify)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (if none, enter 0; if estimate, specify)

1st REPTILE (e.g. snake) HEARD ALONG LENGTH LEFT BANK. OPEN ON RIGHT. UNMANAGED STREAM.

SPECIAL FEATURES (if none, enter 0; if estimate, specify)

RIVER TYPING (if none, enter 0; if estimate, specify)

Number (1-14) **5** Name of them **50m**

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-1140; PAUL RAYEN 7-10-434; ANDREW BROOKES 7-25-5712

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION (Page 3 of 4)

BACKGROUND INFORMATION (this information is being collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (complete all questions)

Site number: **1370** River: **SMITHS LANE** Mid-section grid reference if different from designated site: **ST057150**

Date: **28.11.1994** Start time: **12.45** Surveyor name: **Peter Fox**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but recessed and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

IS THERE A FUNCTIONING NAVIGATION? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

1994 RIVER HABITAT SURVEY: 1994 VERIFICATION (Page 4 of 4)

TEN SPOT CHECKS (at 50m spots)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (do not estimate across channel within 1m of spot)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | RR |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | RR |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | RI |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | RR |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | RR |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | RR |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (if none, enter 0; if estimate, specify)

B = bare U = uniform S = slops C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | NO |
| LEFT BANK | S | S | S | S | S | S | S | S | S | NO |
| RIGHT BANK | S | U | U | U | U | U | U | U | U | NO |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | S | U | S | U | S | S | NO |

CHANNEL VEGETATION TYPES (if none, enter 0; if estimate, specify)

| NONE (tick as appropriate) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Living/woody | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Emergent herbs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergent sedges | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergent reeds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flowering-leaved | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Free-floating | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Submerged | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Filamentous algae | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Use end column for overall assessment over 500m (use E or N)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Mean Annual Flow category (1-10)
Solid geology Drift geology Planform category
Distance from source(km)

FIELD SURVEY DETAILS

Site number: 1371 River: CULM Mid-section grid reference (if different from designated site):
Grid Reference: ST 157140

Date: 29/4/1994 Start time: 11:05 Surveyor name: N. GRIEVE & B. HUTCHINSON

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 30

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 31, 32

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM

☐ Vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

ENTER SITE NUMBER 1371

LAND USE WITHIN 50m OF RIVER

| | L | R | | L | R |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | | | Reg. marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | E | E |
| Moorland/heath | | | Filled land | | |
| Scrub/bush pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 30 Right bank None ☐ Banklength % = 40

Bank Profiles WITHIN 50m OF RIVER

| | L | R | | L | R |
|---------------------|---|---|-------------------------|---|---|
| Natural/Unmodified | | | Artificial/Unmodified | | |
| Vertical/cut-slopes | 7 | 7 | Resectioned | | |
| Vertical + toe | 7 | | Reinforced - whole bank | 7 | 7 |
| Steep (> 45°) | 7 | 7 | Reinforced - top only | | |
| Grass | | | Reinforced - toe only | | |
| Concrete | | | Artificial two-stage | | |
| Composite | | | Poached | | |

Left bank None ☐ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | Left | Right | | Left | Right |
|--------------------------|-------------------------------------|-------------------------------------|------------------------|--------------------------|-------------------------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shoaling of channel | None | Present |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Occasional clumps | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

ASSOCIATED FEATURES (Tick one box per feature)

| | None | Present |
|------------------------|--------------------------|-------------------------------------|
| Shoaling of channel | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Overhanging boughs | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Exposed bankside roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Underwater tree roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Fallen trees | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Woody debris | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Number of RUTS: 156 Unvegetated Point Bars: 2 Vegetated Point Bars: 2

Waterfall/cascade ☒ Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐
Turbulent flow (rapids) ☐ Mature island(s) ☐
Laminar flow (run/slide) ☐ Unvegetated side bar ☐ Vegetated side bar ☐
Static flow (back) ☐ Artificial ☐
Exposed bedrock ☐
Exposed boulders ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **137**

LAND USE WITHIN 50m OF RIVER (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

| | | | | |
|-------------------------|----|------------------------------|----|---|
| Bracken/mailed woodland | EE | Bog, marsh, fen | L | R |
| Coniferous plantation | | Improved/semi-improved grass | EE | |
| Moorland/heath | | Tilled land | | |
| Scrub/rough pasture | | Suburban/urban development | | |

Left bank None ☐ Banklength % = **95** Right bank None ☐ Banklength % = **100**

BRANK PROFILES WITHIN 50m (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

| | | | | | |
|--------------------|----|----|-------------------------|---|---|
| Natural/Unmodified | L | R | Artificial/modified | L | R |
| Vertical/undercut | 77 | EE | Resectioned | | |
| Vertical + toe | 7 | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|-------------------------------------|-------------------------------------|--|--------------------------|-------------------------------------|
| None | Left | Right | Associated Features (Tick one box per feature) | None | Present |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Semi-continuous | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| | | | Woody debris | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

NATURAL CHANNEL FEATURES (Tick one box per feature)

| | | | | | |
|--------------------------|-------------------------------------|------------------------------|--------------------------|----------------------------|-------------------------------------|
| Number of riffles | 2 | Number of riffles | 2 | Number of riffles | 2 |
| Waterfall/cascade | <input type="checkbox"/> | Unvegetated mid-channel bars | <input type="checkbox"/> | Vegetated mid-channel bars | <input checked="" type="checkbox"/> |
| Tormented flow (rapids) | <input checked="" type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> | Mudflats | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | Mudflats | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> |
| Stille flow (slack) | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> |
| Exposed bedrock | <input checked="" type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> | Artificial | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | Artificial | <input type="checkbox"/> | | |

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ENTER SITE NUMBER **137**

CHANGED DIMENSIONS (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

| | | | |
|------------------------------|-------------|---------------------|-------------|
| LEFT BANK | CHANNEL | RIGHT BANK | |
| Bankfull height (m) | 0.7 | Bankfull width (m) | 4.0 |
| Bank height if different (m) | 1.2 | Water width (m) | 2.0 |
| Embanked height (m) | 0.15 | Embanked height (m) | 0.15 |

Bed material at site is: consolidated ☐ chest: silt/clay growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg. turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

None ☐ Number of Culverts = / Weirs = / Bridges = / Outfalls = /

EVIDENCE OF RECENT MANAGEMENT (Within 500m of site)

| | | | |
|--------------|-------------------------------------|-------------------------------------|-------------------|
| BANKS | L | R | CHANNEL |
| None | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | None |
| Resectioning | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-mowing | <input type="checkbox"/> | <input type="checkbox"/> | Wood-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

Is 25% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

USING NOTABLE NUISANCE PLANT SPECIES (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

Active channel, wooded with extensive riffles. Lots of wood debris in channel.

SPECIAL FEATURES (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

Good area of wetland/marsh on right bank.

RIVER TYPING (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

Number (1-14) ☒ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 7-21-1148; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (This information is collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: **1372** River: **YARTY** Mid-section grid reference if different from designated site:

Date: **1.1.6.1994** Start time: **16:00** Surveyor name: **N. O'RIEVE**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (Tick one box only)

vee ☐ s-g-p concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (Tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg. box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (Tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (Tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **137**

TEN SPOT CHECKS (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | CP | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | SC | NO | NO | NO | NO | VP |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | SP | SP | SP | SP | CO | CO | SP | CO | CP | SP |
| Predominant flow type (one entry only) | AL | EF | PO | RE | RE | RE | RE | RE | RE | AL |
| - channel modification(s) | NO | NO | DA | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | RO | NO | NO | RO | RO | RO | NO | NO | NO | RO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | BC | EA | EA | EA | BC | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | SS | SC | NO | SC | NO | SC | NO | NO | SC |

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (If none, enter NO)

LEFT BANK

RIGHT BANK

RIGHT RIPARIAN ZONE (If none, enter NO)

CHANNEL VEGETATION TYPES (Use 2 (or 3) banklengths or 2 (or 3) prism banklengths)

NONE (tick as appropriate)

Liverworts/mosses

Emergent herbs

Emergent reeds/sedges

Flowering-leaved

Free-floating

Amphibious

Submerged

Filamentous algae

Use end column for overall assessment over 500m (use E or V)

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BACKGROUND INFORMATION: This information is being collected separately from the field survey details.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

Site number: 1373 River: ZSE Mid-section grid reference if different from designated site: ST 34552

Date: 21.6.1994 Start time: 9:15 Surveyor name: A. CREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☒

PREDOMINANT CHANNEL FORM (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

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Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 0.1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| Predominant bank material (one entry only) | BR | EA | EA | EA | CC | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | RI | RI | NO | NO | NO | RI | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | VP | SC | SC | NO | NO | VP | SC | SC |
| Predominant channel substrate (one entry only) | SC | SC | SC | SC | SC | CC | CC | CC | CC | CC |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | NO | NO | NO | NO | NO | VP | VP | VP |

VEGETATION STRUCTURE (to be assessed over 0.1m wide zone): Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|---|---|---|----|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | C | S | C | S | NO | C | S | C | S |
| LEFT BANK | U | U | C | S | S | B | S | U | B | U |
| RIGHT BANK | U | B | U | U | C | U | S | U | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | C | C | C | S | C | S | S | C |

CHANNEL VEGETATION TYPES (to be assessed over 0.1m wide zone): Fill in each box with one entry only

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or I)

12 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER: 1373

LAND USE WITHIN 500m OF RIVER (Use E for 0-25% vegetation, I for 26-75%, V for 76-100%)

| | L | R | | L | R |
|-----------------------|---|---|------------------------------|---|---|
| Broadleaved woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 95 Right bank None ☐ Banklength % = 100

CHANNEL PROFILES WITHIN 500m OF RIVER (Use E for 0-25% banklength, I for 26-75%, V for 76-100%)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick none, but estimate percentage banklength if present)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | Left | Right | | None | Present E |
|--------------------------|------|-------|-------------------------|------|-----------|
| None | | | Shading of channel | | |
| Isolated/scattered | | | Overhanging boughs | | |
| Regularly spaced, single | | | Exposed bank-side roots | | |
| Occasional clumps | | | Underwater tree roots | | |
| Semi-continuous | | | Fallen trees | | |
| Continuous | | | Woody debris | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | None | Present E | | None | Present E |
|--------------------------|------|-----------|------------------------------|------|-----------|
| Waterfall/cascade | | | Unvegetated mid-channel bars | | |
| Torrential flow (rapids) | | | Vegetated mid-channel bars | | |
| Laminar flow (run/slide) | | | Mature island(s) | | |
| Static flow (slack) | | | Unvegetated side bar | | |
| Exposed bedrock | | | Vegetated side bar | | |
| Exposed boulders | | | Artificial | | |

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CHANNEL DIMENSIONS AND INFLUENCES

Channel dimensions to be measured at one site on a straight uniform section, preferably across a riffle

| | Channel | Right Bank |
|------------------------------|-----------------|------------------------------|
| Bank full height (m) | 1.0 | Bank full height (m) |
| Bank height if different (m) | 2.5 | Bank height if different (m) |
| Embanked height (m) | Water depth (m) | Embanked height (m) |

Bed material at site is: consolidated ☐ loose: algal growth compact, stable
unconsolidated ☐ loose: fresh clean gravel, easily dislodged, loose
unknown ☐ loose: coarse or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use only method, then total: tick 'none' where appropriate)

None ☐ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | None | Present E |
|--------------|------|-----------|
| Banks | | |
| Resectioning | | |
| Bank-moving | | |
| Enhancement | | |

CHOICED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE RUSSIAN PLANT SPECIES (tick box(es) if present, then total: tick 'none' where appropriate)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site or a whole reach)

Active channel - predominantly gravel - pool 2.5m x 1.5m - some debris in pool - some bank erosion

SPECIAL FEATURES (tick one box per feature)

None ☐ Number (1-14) ☐ Name of them ☐

TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RMA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HS. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-15-5111

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ENTER SITE NUMBER 1374

LAND USE WITHIN 500M OF RIVER (UP TO 200M downstream of UPRIVER)

| | L | R | | L | R |
|-----------------------|-------------------------------------|-------------------------------------|------------------------------|-------------------------------------|-------------------------------------|
| Broadleaved woodland | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Deep, marsh, fen | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Coniferous plantation | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Improved/semi-improved grass | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Moorland/heath | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Tilled land | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Scrub/heath pasture | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Suburban/urban development | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 0.0 Right bank None ☐ Banklength % = 100

BACK PROFILES WITHIN 500M OF RIVER (UP TO 200M downstream of UPRIVER)

| Natural/Unmodified | L | R | Artificial/Modified | L | R |
|--------------------|-------------------------------------|-------------------------------------|-------------------------|-------------------------------------|-------------------------------------|
| Vertical/hedgerow | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Recessed | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vertical + toe | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Reinforced - whole bank | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Steep (> 45°) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Reinforced - top only | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Gentle | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Reinforced - toe only | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Compuls | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Artificial two-stage | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | | | Parished | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

REINFORCEMENTS (tick one box or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | Left | Right | ASSOCIATED FEATURES (Tick one box per feature) |
|--------------------------|--------------------------|--------------------------|--|
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overlapping boughs |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots |
| Occasional clumps | <input type="checkbox"/> | <input type="checkbox"/> | Understorey tree roots |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris |

NATURAL CHANNEL FEATURES (Recent aerial photo of UPRIVER, pools and point bars)

| Number of riffles = 1 | Pools = 0 | Unvegetated Point Bars = 0 | Vegetated Point Bars = 0 |
|--------------------------|--------------------------|----------------------------|--------------------------|
| None | Present | None | Present |
| Waterfalls/cascades | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Terraced flow (rapids) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Laminar flow (run/slide) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Stale flow (back) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|--------------------|------------------------------|
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily disturbed, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☐ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☐ (tick one box)

NUMBER OF ARTIFICIAL FEATURES (Use tally method; then total; tick one box)

None ☐ Number of Culverts = 0 Weirs = 0 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (Obvious signs; tick one box)

| BANKS | L | R | CHANNEL |
|---------------|--------------------------|--------------------------|-------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | None |
| Recessed | <input type="checkbox"/> | <input type="checkbox"/> | Dredging |
| Bank-slumping | <input type="checkbox"/> | <input type="checkbox"/> | Weed-cutting |
| Enhancement | <input type="checkbox"/> | <input type="checkbox"/> | Enhancement works |

CHOKED CHANNEL (tick one box)

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

UNDESIRABLE NUISANCE PLANT SPECIES (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Use only if you have a good knowledge of the site)

Small headwater stream - ditch like in character - not very formed - but rich surrounding. Spots of good.

SPECIAL FEATURES (tick one box)

Left bank: grassy meadow / willow / pond. - v good with reeds.

RIVER TYPING (Refer to photographs of river types and features; tick one box)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-16-4341; ANDREW BROOKES 7-25-5112

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 3 of 4

BACKGROUND INFORMATION (This information is to be collected separately)

Altitude (m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1374 River: LOPEN BROOK Mid-section grid reference if different from designated site: ST449 145

Date: 1.1.1994 Start time: 11.45 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY, 1994 VERIFICATION Page 4 of 4

TEN SPOT CHECKS (at 500M SPACES)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | SC | SC | NO | SC | NO | NO | NO |
| Predominant channel substrate (one entry only) | S | S | S | S | S | S | GP | S | S | S |
| Predominant flow type (one entry only) | A | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | RS | RS | RS | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | NO | SC | SC | NO | NO | SC | SC | SC |

VEGETATION STRUCTURE (to be assessed at 100m scale; tick one box in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| LEFT RIPARIAN ZONE (if none, enter NO) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | B | S | U | U | B | B | U | S | U | U |
| RIGHT BANK | B | U | B | B | B | B | C | U | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | U | U | S | U | U | U | U | C | C | C |

CHANNEL VEGETATION TYPES (tick one box in each box with one entry only)

NONE (tick as appropriate)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Liverworts/mosses | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergent herbs | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergent reeds/sedges | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Floating-leaved | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Free-floating | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Amphibious | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Submerged | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Filamentous algae | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

The end column for overall assessment over 500m (use E or A)

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 1 of 4

BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source(km)

Site number: 1315 River Yes Mid-section grid reference if different from designated site:

Date: 15/5/1994 Start time: 10:10 Surveyor name: P. Hume R. Hume

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☒ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resilted and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☒ no obvious modification (semi-natural)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 4

TEN SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 1m side angle)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (to be assessed only at 10m, 50m, 100m, 200m, 300m, 400m, 500m, 600m, 700m, 800m, 900m, 1000m)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | U | S | C | U | S | C | U | S | C |
|---|---|---|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | | | | | | | | | |
| LEFT BANK | | | | | | | | | |
| RIGHT BANK | | | | | | | | | |
| RIGHT RIPARIAN ZONE (if none, enter NO) | | | | | | | | | |

CHANGING VEGETATION TYPES (to be assessed across channel with one entry only)

NONE (tick as appropriate)

| | U | S | C | U | S | C | U | S | C |
|-----------------------|---|---|---|---|---|---|---|---|---|
| Emergent herbs | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | |
| Floating leaves | | | | | | | | | |
| Free-floating | | | | | | | | | |
| Amphibious | | | | | | | | | |
| Submerged | | | | | | | | | |
| Filamentous algae | | | | | | | | | |

Use end column for overall assessment over 500m (use E or I)

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER: 1315

LAND USE WITHIN 50m OF RIVER (tick one box only)

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Backlength % = 20 Right bank None ☐ Backlength % = 45

LANDSCAPE PROFILES WITHIN 500m (tick one box only)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/unmodified | | |
| Vertical/undercut | | | Resilted | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick one box only)

Left bank None ☐ Backlength % = Right bank None ☐ Backlength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

| | Left | Right | | Left | Right |
|--------------------------|------|-------|------------------------|------|-------|
| Name | | | E > 33% | | |
| Isolated/scattered | | | Shading of channel | | |
| Regularly spaced, single | | | Overhanging boughs | | |
| Occasional clumps | | | Exposed bankside roots | | |
| Semi-continuous | | | Underwater tree roots | | |
| Continuous | | | Fallen trees | | |
| | | | Windy debris | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | None | Present | | None | Present |
|--------------------------|------|---------|-----------------------------|------|---------|
| Waterfall/cascade | | | Unvegetated mid-channel bar | | |
| Torrential flow (rapids) | | | Vegetated mid-channel bar | | |
| Laminar flow (run/glide) | | | Mature island(s) | | |
| Static flow (slack) | | | Unvegetated side bar | | |
| Exposed bedrock | | | Vegetated side bar | | |
| Exposed boulders | | | Artificial | | |

22 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (tick one box only)

| | CHANNEL | RIGHT BANK |
|------------------------------|-----------------|------------------------------|
| Bank full height (m) | 1.0 | Bank full height (m) |
| Bank height if different (m) | 1.55 | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material at site: consolidated ☐ loose: algal growth compact, stable ☐
unconsolidated ☐ loose: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☐ run or glide ☒ eddy ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box only)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

BANKS: Name ☐ Resilience ☐ Bank-mowing ☐ Enhancement ☐

CHANNEL: Name ☐ Resilience ☐ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

UNNOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box only)

DEEP FLOW, WINDY RIVER, WITH A RAPID, EXPOSED BEDROCK, TALL GRASS AND BUSHES ON EITHER BANK.

SPECIAL FEATURES (tick one box only)

Other features of interest: None

RIVER TYING (tick one box only)

Number (1-14) ☐ None of them ☐

TIME TAKEN (tick one box only)

40 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1JL. TELEPHONE NUMBERS: PETER FOX 7-21-2148; PAUL RAYN 7-10-4343; ANDREW BROOKES 7-25-5712.

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (Use 0-9, 0=33% banklength, 1=33% banklength, 2=33% banklength)

| | | | | | |
|-----------------------|---|---|------------------------------|---|---|
| Broadleaved woodland | L | R | Bog, marsh, fen | L | R |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES (WITHIN 500m OF RIVER (Use 0-9, 0=33% banklength, 1=33% banklength, 2=33% banklength))

| | | | | | |
|---------------------|---|---|------------------------|---|---|
| Natural/unmodified | L | R | Artificial/modified | L | R |
| Vertical/horizontal | | | Revetment | | |
| Vertical + toe | | | Revetment - whole bank | | |
| Slope (> 45°) | | | Revetment - top only | | |
| Gravel | | | Revetment - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Postbed | | |

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | | | | |
|--------------------------|------|-------|------------------------|---------|
| None | Left | Right | None | Present |
| Isolated/scattered | | | Shading of channel | |
| Regularly spaced, clumps | | | Overhanging boughs | |
| Occasional clumps | | | Exposed bankside roots | |
| Semi-continuous | | | Underwater tree roots | |
| Continuous | | | Fallen trees | |
| | | | Woody debris | |

ASSOCIATED FEATURES (Tick one box per feature)

None Present

Shading of channel

Overhanging boughs

Exposed bankside roots

Underwater tree roots

Fallen trees

Woody debris

NATURAL CHANNEL FEATURES

Number of riffles 14

Unvegetated Point Bars

Vegetated Point Bars

Unvegetated mid-channel bars

Vegetated mid-channel bars

Mature island(s)

Unvegetated side bar

Vegetated side bar

Artificial

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a turn)

| | | |
|------------------------------|--------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material at site is: consolidated ☒ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☐ interstitial or not visible (e.g. turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

QUANTITATIVE: (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total, tick, none, where appropriate)

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☒ 3

EVIDENCE OF RECENT MANAGEMENT (Others: tick one box, none, where appropriate)

BANKS

None ☒ Revetment ☐ Bank-mowing ☐ Enhancement ☐

CHANNEL

None ☒ Dredging ☐ Weed-cutting ☐ Enhancement works ☐ Stone ☐

CITIED CHANNEL

Is 33% or more of the channel over 500m checked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick box(es) and note in column)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Write a few short sentences representative of site as a whole)

Spot check 1: upstream 5m SW, with abundant vegetation.

SPECIAL FEATURES (if above, extent, location of high interest, individual upshot)

RIVER TYPING (Refer to photographs of river types and include which stream, the type)

Number (1-14) 6 None of them ☐

VERIFICATION TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HB. HELPLINE NUMBERS: PETER FOX 7-21-3150; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-15-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Solid geology Mean Annual Flow category (1-10) Distance from source (km) Drift geology Platform category

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1376 River YEO Mid-section grid reference if different from designated site: ST634156

Date 3/6/1994 Start time: 12:15 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER

SPOT CHECKS (at 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 2m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | SC | NO | SC | SC | SC | SC | SC | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | SP | SP | SP | SP | SP | SP | SP | SP | SP | CL |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

S = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO)

LEFT BANK

RIGHT BANK

RIGHT RIPARIAN ZONE (if none, enter NO)

CHANNEL VEGETATION TYPES (to be entered with one entry only, tick one box, none, where appropriate)

NONE (tick as appropriate)

Emergent herbs

Emergent reeds/sedges

Flowering-leaved

Free-floating

Amphibious

Submerged

Filamentous algae

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

ENTER SITE NUMBER 1377

Altitude (m) _____ Slope _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Drift geology _____ Platform category _____
Distance from source (km) _____

FIELD SURVEY DETAILS: Complete all questions

Site number: 1377 River: LUDDEY Mid-section grid reference if different from designated site: _____
Grid Reference: ST 752150
Date: 31/6/1994 Start time: 2:30 Surveyor name: N. CREVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state _____

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforcement) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐
step-pool cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

ENTER SITE NUMBER 1377

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto II and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | E | E | E | E | E | E | E | E | E | E |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | N | N | N | N | N | N | N | N | N | N |
| CHANNEL | S | S | S | S | S | S | S | S | S | S |
| Predominant channel substrate (one entry only) | S | S | S | S | S | S | S | S | S | S |
| Predominant flow type (one entry only) | A | A | A | A | A | A | A | A | A | A |
| - channel modification(s) | N | N | N | N | N | N | N | N | N | N |
| - channel feature(s) | N | N | N | N | N | N | N | N | N | N |
| RIGHT BANK | E | E | E | E | E | E | E | E | E | E |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | N | N | N | N | N | N | N | N | N | N |

VEGETATION STRUCTURE (to be assessed over a 10m wide zone). Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | B | U | S | C |
|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S |
| LEFT BANK | S | S | S | S |
| RIGHT BANK | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S |

TYPE OF CHANNEL VEGETATION TYPES (to be assessed over a 10m wide zone). Fill in each box with one entry only: E (2-13% area) or F (percent)

NONE (tick as appropriate)

| | E | F |
|-----------------------|---|---|
| Liverworts/mosses | | |
| Emergent herbs | | |
| Emergent reeds/sedges | | |
| Floating-leaved | | |
| Free-floating | | |
| Amphibious | | |
| Submerged | | |
| Filamentous algae | | |

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 3

ENTER SITE NUMBER 1377

LAND USE WITHIN 500m OF RIVER (tick one box only)

| | L | R |
|------------------------------|---|---|
| Broadleaved woodland | | |
| Coniferous plantation | | |
| Moorland/heath | | |
| Scrub/rough pasture | | |
| Improved/semi-improved grass | | |
| Tilled land | | |
| Suburban/urban development | | |

EXTENT OF RIPARIAN ZONE (tick name, but or estimate percentage banklength if present)

Left bank Name ☐ Banklength % ☐ Right bank Name ☐ Banklength % ☐

BANK PROFILES WITHIN 500m (tick one box only)

| | L | R |
|-------------------------|---|---|
| Natural/unmodified | | |
| Vertical/handcut | | |
| Vertical + toe | | |
| Slope (> 45°) | | |
| Grass | | |
| Composite | | |
| Artificial/unmodified | | |
| Re-sectioned | | |
| Reinforced - whole bank | | |
| Reinforced - top only | | |
| Reinforced - toe only | | |
| Artificial two-stage | | |
| Poached | | |

EMBANKMENTS (tick name, but or estimate percentage banklength if present)

Left bank Name ☐ Banklength % ☐ Right bank Name ☐ Banklength % ☐

ENTIRE EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)

| | Left | Right |
|--------------------------|------|-------|
| None | | |
| Isolated/scattered | | |
| Regularly spaced, single | | |
| Occasional clumps | | |
| Semi-continuous | | |
| Continuous | | |

ASSOCIATED FEATURES (tick one box per feature)

| | None | Present |
|------------------------|------|---------|
| Shading of channel | | |
| Overhanging boughs | | |
| Exposed bankside roots | | |
| Underwater tree roots | | |
| Fallen trees | | |
| Woody debris | | |

NATURAL CHANNEL FEATURES (Record actual number, 0-100; pool and point bar)

| | Number of Riffles | Number of Pools | Number of Point Bars | Number of Vegetated Point Bars |
|------------------------------|-------------------|-----------------|----------------------|--------------------------------|
| Waterfall/cascade | | | | |
| Torrential flow (rapids) | | | | |
| Laminar flow (pool/slides) | | | | |
| Static flow (slack) | | | | |
| Exposed bedrock | | | | |
| Exposed boulders | | | | |
| Unvegetated mid-channel bars | | | | |
| Vegetated mid-channel bars | | | | |
| Mature island(s) | | | | |
| Unvegetated side bar | | | | |
| Vegetated side bar | | | | |
| Artificial | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

ENTER SITE NUMBER 1377

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|---------|------------------------------|
| Bankfull height (m) | 2.0 | Bankfull width (m) |
| Bank height if different (m) | | Water width (m) |
| Embanked height (m) | | Water depth (m) |
| | | Bankfull height (m) |
| | | Bank height if different (m) |
| | | Embanked height (m) |

Bed material at site is: consolidated ☐ chest: algal growth compact, stable
unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose
unknown ☒ inaccessible or not visible (eg turbid water) FROMBURY SLIT

Location of measurement is: riffle ☐ run or glide ☐ other ☒ (tick one box)

Significant tributary within 500m head? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method; then total tick name - where appropriate)

None ☐ Number of Culverts ☐ Weirs ☐ Bridges ☐ Outfalls ☐

EVIDENCE OF RECENT SIGNIFICANT CHANGES (tick name, but or estimate percentage banklength if present)

| | L | R | CHANNEL |
|-------------------|---|---|---------|
| BANKS | | | |
| None | | | |
| Re-sectioning | | | |
| Bank-mowing | | | |
| Enhancement | | | |
| Dredging | | | |
| Wood-cutting | | | |
| Enhancement works | | | |
| State | | | |

CHOICE OF CHANNEL TYPE (tick one box only)

Is 55% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick boxes) (do not tick if not present)

Giant Hogweed ☐ Humulus lupulus ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check; representative of site or a whole river)

Growing meadow channel with v. steep banks. Lots of emergent vegetation. Slough of silt at 500m.

SPECIAL FEATURES (tick name, but or estimate percentage banklength if present)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☐ None of them ☒

TIME TAKEN (tick one box only)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-31-2140; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-15-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 132

LAND USE WITHIN 500M OF RIVER (tick one box per feature)

| | | | | | |
|------------------------------|--|--|------------------------------|--|--|
| Broadleaf/deciduous woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank: None ☒ Backlength % = 100 Right bank: None ☒ Backlength % = 100

BANK PROFILES WITHIN 500M OF RIVER (tick one box per feature)

| | | | | | |
|--------------------|--|--|-------------------------|--|--|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/undrained | | | Recessed | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Quartz | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Peached | | |

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| TREES (Tick one box per bank) | | ASSOCIATED FEATURES (Tick one box per feature) | |
|-------------------------------|--|--|--|
| None | | Stalling of channel | |
| Isolated/scarred | | Overhanging boughs | |
| Regularly spaced, single | | Exposed bankside roots | |
| Occasional clumps | | Underwater tree roots | |
| Semi-continuous | | Fallen trees | |
| Continuous | | Woody debris | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| Number of riffles = 2 | | Pools = 0 | | Unvegetated Point Bars = 0 | | Vegetated Point Bars = 25 | |
|--------------------------|--|-----------|---------|------------------------------|---------|---------------------------|---------|
| Waterfall/cascade | | None | Present | None | Present | None | Present |
| Terraced flow (rapid) | | | | Unvegetated mid-channel bars | | | |
| Laminar flow (run/glide) | | | | Vegetated mid-channel bars | | | |
| Stale flow (dye) | | | | Mature island(s) | | | |
| Exposed bedrock | | | | Unvegetated side bar | | | |
| Exposed boulders | | | | Vegetated side bar | | | |
| | | | | Artificial | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 132

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|---------|------------------------------|
| Bankfull height (m) | 1.0 | Bankfull height (m) |
| Bank height if different (m) | 2.0 | Bank height if different (m) |
| Embanked height (m) | | Embanked height (m) |

Bed material at site is: consolidated ☒ else: algal growth compact, stable
unconsolidated ☒ else: fresh clean gravel, easily displaced, loose
unknown ☒ else: inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☒ other ☒ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

| | | | | | |
|--|-----------|---------|--------|-----------|------------|
| None <input checked="" type="checkbox"/> | Number of | Chert = | Wain = | Bridges = | Outfalls = |
|--|-----------|---------|--------|-----------|------------|

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | | | |
|-------------|--|-------------------|--|
| BANKS | | CHANNEL | |
| None | | None | |
| Recessing | | Dredging | |
| Bank-mowing | | Weed-cutting | |
| Enhancement | | Enhancement works | |

CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☒ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (under 100 characters)

Very sandy stream, & consequently many vegetated bars. Mostly wooded channel. Star-flake sand.

SPECIAL FEATURES (tick one box per feature)

RIVER TYPING (tick one box per feature)

Number (1-14) ☐ None of them ☒

TIME TAKEN (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-1149; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-15-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 132

BACKGROUND INFORMATION (this information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source (km)

FIELD SURVEY DETAILS (tick one box per feature)

Site number: 1328 River: R. S. M. Mid-section grid reference (if different from designated site): ST846153

Date: 3/16/1994 Start time: 1615 Surveyor name: A. J. G. J. E. V. E.

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box per feature)

| | | | |
|---------------------------------|--|--|--|
| yes | | predominantly culverted | |
| concave/bowl | | open, but bed or banks predominantly artificial (eg bar reinforcement) | |
| stepped valley floor (terraced) | | open, little or no obvious reinforcement, but resectioned and/or realigned | |
| symmetrical | | open, but predominantly artificially dug (eg. mill leat, dyke) | |
| asymmetrical | | not artificial, but dammed | |
| gorge | | no obvious modification ('semi-natural') | |

NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

| | | | | | |
|-----------------------|--|-----------------------|--|-----------|--|
| torrential/whitewater | | riffle-pool | | stale | |
| step-pool cascade | | approximately laminar | | impounded | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 132

TEN SPOT CHECKS (at 50m spacing)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (tick one box per feature)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | N | N | N | N | N | N | N | N | N | N |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | S | S | S | S | S | S | S | S | S | S |
| Predominant flow type (one entry only) | A | A | A | A | A | A | A | A | A | A |
| - channel modification(s) | N | N | N | N | N | N | N | N | N | N |
| - channel feature(s) | N | N | N | N | N | N | N | N | N | N |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | N | N | N | N | N | N | N | N | N | N |

VEGETATION STRUCTURE (tick one box per feature)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | U | S | C | C | C | C | C | C | C |
| LEFT BANK | S | U | U | C | S | S | S | S | S | S |
| RIGHT BANK | U | S | S | U | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | C | C | S | C | U | C | S | S | C |

PLANT COMMUNITY TYPES (tick one box per feature)

NONE (tick as appropriate)

| | | | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|--|--|
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use R or L)

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BACKGROUND INFORMATION: This information is being collected separately.

Altitude(m) _____ Slope _____ Drift geology _____ Mean Annual Flow category (1-10) _____
Solid geology _____ Planform category _____

FIELD SURVEY DETAILS: Complete all questions.

Site number: 1410 River: AXE Mid-section grid reference if different from designated site: _____
Grid Reference: ST 349049

Date: 2.1.94 Start time: 11.00 Surveyor name: N. GRIEVE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only):

☐ vee ☐ predominantly culverted ☐
☒ concave/bowl ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐
☐ stepped valley floor (terraced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐
☐ symmetrical ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐
☐ asymmetrical ☐ not artificial, but dammed ☐
☐ gorge ☒ no obvious modification ("semi-natural") ☒

NAVIGATION (tick one box only):

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only):

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 2 of 2

SPOT CHECK 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within 0.1m site zone)

Fill in each box before moving onto 11 and 1 at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | E | E | E | E | E | E | E | E | E | E |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | S | N | S | S | S | S | S | S | S | S |
| CHANNEL | S | S | S | S | S | S | S | S | S | S |
| Predominant channel substrate (one entry only) | S | S | S | S | S | S | S | S | S | S |
| Predominant flow type (one entry only) | A | A | A | A | A | A | A | A | A | A |
| - channel modification(s) | N | N | N | N | N | N | N | N | N | N |
| - channel feature(s) | N | N | N | N | N | N | N | N | N | N |
| RIGHT BANK | E | E | E | E | E | E | E | E | E | E |
| Predominant bank material (one entry only) | E | E | E | E | E | E | E | E | E | E |
| - bank modification (one entry only) | N | N | N | N | N | N | N | N | N | N |
| - bank feature(s) | S | N | S | S | S | S | S | S | S | S |

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch. Fill in each box with one entry only)

B = base U = uniform S = simple C = complex Refer to spot-check key

| | B | U | S | C |
|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | C | U | S |
| LEFT BANK | S | C | U | S |
| RIGHT BANK | S | C | U | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | C | U | S |

CHANNEL VEGETATION TYPES (fill in different boxes with one entry only: B (2-3% cover), S (4-10% cover), C (11-20% cover), U (21-30% cover), V (31-40% cover), W (41-50% cover), X (51-60% cover), Y (61-70% cover), Z (71-80% cover), AA (81-90% cover), AB (91-100% cover))

| | B | U | S | C |
|----------------------------|---|---|---|---|
| NONE (tick as appropriate) | | | | |
| Liverworts/mosses | | | | |
| Emergent herbs | | | | |
| Emergent reeds/sedges | | | | |
| Floating-leaved | | | | |
| Free-floating | | | | |
| Amphibious | | | | |
| Submerged | | | | |
| Filamentous algae | | | | |

Use end column for overall assessment over 500m (tick E or A)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 3 of 3

ENTER SITE NUMBER: 1410

LAND USE WITHIN 100m OF RIVER (tick one box per 100m stretch)

| | L | R | | L | R |
|--------------------------|---|---|------------------------------|---|---|
| Broadleaf/mixed woodland | | | Bag. marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LOCAL EXTENT OF RIPARIAN ZONE (tick one box per 100m stretch)

Left bank None ☐ Banklength S = 100 Right bank None ☐ Banklength S = 100

BANK PROFILES WITHIN 100m (tick one box per 100m stretch)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/Unmodified | | | Artificial/Unmodified | | |
| Vertical/Undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Quartz | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick one box per 100m stretch)

Left bank None ☐ Banklength S = Right bank None ☐ Banklength S =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)

| | Left | Right | | None | Present | E |
|--------------------------|------|-------|------------------------|------|---------|---|
| None | | | Shading of channel | | | |
| Isolated/scattered | | | Over-hanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Semi-continuous | | | Felice trees | | | |
| Continuous | | | Woody debris | | | |

ASSOCIATED FEATURES (tick one box per feature)

Number of RIFLE POOLS: 2 Unvegetated Point Bars: 0 Vegetated Point Bars: 5

WATERFALL/CASCADE: 1

TORENTIAL FLOW (rapids): 1

LAMINAR FLOW (run/glide): 1

STATIC FLOW (slack): 1

EXPONDED BEDROCK: 1

EXPONDED BOUNDARIES: 1

UNVEGETATED MID-CHANNEL BARS: 1

VEGETATED MID-CHANNEL BARS: 1

MISUSE ISLAND(S): 1

UNVEGETATED SIDE BAR: 1

VEGETATED SIDE BAR: 1

ARTIFICIAL: 1

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION Page 4 of 4

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|---------------------|------------------------------|
| Bank/fall height (m) | Bank/fall width (m) | Bank/fall height (m) |
| 1.7 | 12.0 | 1.7 |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| 2.0 | 8.0 | 2.0 |
| Embanked height (m) | Water depth (m) | Embanked height (m) |
| | 0.15 | |

Bed material at site is: consolidated ☐ clay: algal growth compact, stable
unconsolidated ☒ clay: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only):

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total, tick 'none' where appropriate)

| None | Number of | Culverts | Weirs | Bridges | Outfalls |
|------|-----------|----------|-------|---------|----------|
| | | | | | |

EVIDENCE OF RECENT MANAGEMENT (check sign; tick 'none' where appropriate)

| BANKS | None | Channel |
|---------------|------|---------|
| Repositioning | | |
| Bank-moving | | |
| Enhancement | | |

CHOKED CHANNEL (tick one box only):

Is 33% or more of the channel over 500m choked with vegetation? No ☒ Yes ☐

NOTABLE NUISANCE PLANT SPECIES (tick box (a) if you need to estimate abundance)

Giant Hogweed ☒ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site or a stretch)

Majoring channel, heavily banked by riparian
Rifle & pool areas - steep banks - steep banks

SPECIAL FEATURES (eg gabions, artificial habitats of high interest, incidental lighting)

Apparently an old Roman ford within 500m area !!!

RIVER TYPING (Refer to photographs of river types and indicate which resembles the site)

Number (1-14) ☒ None of them ☐

TIME TAKEN (min): 12

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
PETER FOX, AKA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE
HELPLINE NUMBERS: PETER FOX 7-21-114; PAUL RAVEN 7-10-43; ANDREW BROOKS 7-25-5711

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1411

LAND USE WITHIN 500m OF RIVER (USE 1-5) (tick one box per feature)

| | | | |
|------------------------------|-------------------------------------|------------------------------|-------------------------------------|
| Broadleaf/deciduous woodland | <input checked="" type="checkbox"/> | Do, marsh, fen | <input type="checkbox"/> |
| Coniferous plantation | <input type="checkbox"/> | Improved/semi-improved grass | <input checked="" type="checkbox"/> |
| Moorland/heath | <input type="checkbox"/> | Tilled land | <input checked="" type="checkbox"/> |
| Scrub/rough pasture | <input type="checkbox"/> | Suburban/urban development | <input checked="" type="checkbox"/> |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

| | |
|--|---|
| Left bank None <input type="checkbox"/> Banklength % = <u>50</u> | Right bank None <input type="checkbox"/> Banklength % = <u>70</u> |
|--|---|

BACK PROFILES WITHIN 500m OF SITE (tick one box per feature)

| | | | |
|--------------------|-------------------------------------|-------------------------|--------------------------|
| Natural/unmodified | <input checked="" type="checkbox"/> | Artificial/modified | <input type="checkbox"/> |
| Vertical/undercut | <input checked="" type="checkbox"/> | Recessed | <input type="checkbox"/> |
| Vertical + toe | <input checked="" type="checkbox"/> | Reinforced - whole bank | <input type="checkbox"/> |
| Step (> 45°) | <input checked="" type="checkbox"/> | Reinforced - top only | <input type="checkbox"/> |
| Grass | <input checked="" type="checkbox"/> | Reinforced - toe only | <input type="checkbox"/> |
| Composite | <input checked="" type="checkbox"/> | Artificial two-stage | <input type="checkbox"/> |
| | | Paved | <input type="checkbox"/> |

EMBANKMENTS (tick one box per feature)

| | |
|--|---|
| Left bank None <input type="checkbox"/> Banklength % = | Right bank None <input type="checkbox"/> Banklength % = |
|--|---|

TREES (tick one box per bank)

| | | | |
|--------------------------|-------------------------------------|------------------------|--------------------------|
| None | <input checked="" type="checkbox"/> | Shading of channel | <input type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> |
| Occasional clumps | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> |

ASSOCIATED FEATURES (tick one box per feature)

| | | | |
|-----------------------|--------------------------|------------------------|--------------------------|
| None | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> |
| Overhanging boughs | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> |
| Underwater tree roots | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> |
| Fallen trees | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | |
|-----------------------------|-----------------------------------|---------------------------------|--------------------------|
| Number of riffles <u>16</u> | Unvegetated Point Bars = <u>0</u> | Vegetated Point Bars = <u>0</u> | |
| Waterfall/cascade | <input type="checkbox"/> | Unvegetated mid-channel bars | <input type="checkbox"/> |
| Torrential flow (rapids) | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> |
| Laminar flow (run/glide) | <input type="checkbox"/> | Mudflats (sand/silt) | <input type="checkbox"/> |
| Stale flow (slack) | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | Artificial | <input type="checkbox"/> |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1411

CHANNEL DIMENSIONS (tick one box per feature)

| | | |
|---------------------------------------|-------------------------------|---------------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) <u>1.2</u> | Bankfull width (m) <u>0.5</u> | Bankfull height (m) <u>1.2</u> |
| Bank height if different (m) <u>—</u> | Water width (m) <u>2.0</u> | Bank height if different (m) <u>—</u> |
| Embankment height (m) <u>—</u> | Water depth (m) <u>0.15</u> | Embankment height (m) <u>—</u> |

Bed material at site is:

| | | |
|----------------|-------------------------------------|---|
| consolidated | <input checked="" type="checkbox"/> | chest slight growth compact, stable |
| unconsolidated | <input type="checkbox"/> | chest fresh clean gravel, easily dislodged, loose |
| unknown | <input type="checkbox"/> | inaccessible or not visible (eg turbid water) |

Location of measurements is:

| | | | | | |
|--------|-------------------------------------|--------------|--------------------------|-------|---|
| riffle | <input checked="" type="checkbox"/> | run or glide | <input type="checkbox"/> | other | <input type="checkbox"/> (tick one box) |
|--------|-------------------------------------|--------------|--------------------------|-------|---|

Significant tributaries (tick one box per feature)

| | | | |
|-----|--------------------------|----|-------------------------------------|
| Yes | <input type="checkbox"/> | No | <input checked="" type="checkbox"/> |
|-----|--------------------------|----|-------------------------------------|

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

| | | | | | | | | | |
|------|--------------------------|-----------|----------|---------|----------|-----------|----------|------------|----------|
| None | <input type="checkbox"/> | Number of | <u>0</u> | Width = | <u>1</u> | Bridges = | <u>2</u> | Outfalls = | <u>0</u> |
|------|--------------------------|-----------|----------|---------|----------|-----------|----------|------------|----------|

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | |
|--------------|-------------------------------------|
| BANKS | CHANNEL |
| None | <input checked="" type="checkbox"/> |
| Revetting | <input type="checkbox"/> |
| Bank-erosion | <input type="checkbox"/> |
| Enhancement | <input type="checkbox"/> |
| | State |

CHOKED CHANNELS (tick one box per feature)

| | | |
|---|--|------------------------------|
| Is 33% or more of the channel over 500m choked with vegetation? | NO <input checked="" type="checkbox"/> | YES <input type="checkbox"/> |
|---|--|------------------------------|

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

| | | | | | |
|---------------|-------------------------------------|------------------|--------------------------|-------------------|--------------------------|
| Giant Hogweed | <input checked="" type="checkbox"/> | Himalayan Balsam | <input type="checkbox"/> | Japanese Knotweed | <input type="checkbox"/> |
|---------------|-------------------------------------|------------------|--------------------------|-------------------|--------------------------|

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Special features (tick one box per feature)

Number (1-14) ☐ None of them ☒

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-3149; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5711

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (tick one box per feature)

| | | |
|---------------|---------------|----------------------------------|
| Altitude (m) | Stop | Mean Annual Flow category (1-10) |
| Solid geology | Drift geology | Planform category |

FIELD SURVEY DETAILS (tick one box per feature)

| | | |
|---|--|---|
| Site number <u>1411</u> | River <u>WHITLEY STREAM</u> | Mid-section grid reference if different from designated site: |
| Date <u>1/6/1994</u> | Start time <u>13:40</u> | Surveyor name <u>N. GREVE</u> |
| Are conditions affecting survey? | No <input checked="" type="checkbox"/> | Yes <input type="checkbox"/> If yes, state |
| Bed of river visible? | No <input type="checkbox"/> | partially <input type="checkbox"/> entirely <input checked="" type="checkbox"/> (tick one box) |
| Photograph: general character? | No <input type="checkbox"/> | Yes <input checked="" type="checkbox"/> (tick one box) |
| Photograph of channel measurement site? | No <input type="checkbox"/> | Yes <input checked="" type="checkbox"/> (tick one box) |
| Site surveyed from: | left bank <input type="checkbox"/> | right bank <input type="checkbox"/> both banks <input type="checkbox"/> channel <input checked="" type="checkbox"/> |

PREDOMINANT VALLEY FORM (tick one box per feature)

| | |
|---------------------------------|-------------------------------------|
| vee | <input type="checkbox"/> |
| concave/bow | <input checked="" type="checkbox"/> |
| stepped valley floor (terraced) | <input type="checkbox"/> |
| symmetrical | <input type="checkbox"/> |
| asymmetrical | <input type="checkbox"/> |
| gorge | <input type="checkbox"/> |

PREDOMINANT CHANNEL FORM (tick one box per feature)

| | |
|---|-------------------------------------|
| predominantly culverted | <input type="checkbox"/> |
| open, but bed or banks predominantly artificial (eg box reinforced) | <input type="checkbox"/> |
| open, little or no obvious reinforcement, but recessed and/or realigned | <input type="checkbox"/> |
| open, but predominantly artificially dug (eg. mill leat, dyke) | <input type="checkbox"/> |
| not artificial, but dammed | <input type="checkbox"/> |
| no obvious modification ('semi-natural') | <input checked="" type="checkbox"/> |

NAVIGATION (tick one box per feature)

| | | |
|------------------------------------|--|--|
| Is there a functioning navigation? | No <input checked="" type="checkbox"/> | Yes <input type="checkbox"/> Don't know <input type="checkbox"/> |
|------------------------------------|--|--|

PREDOMINANT FLOW TYPE (tick one box per feature)

| | | | | | |
|-----------------------|--------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
| torrential/whitewater | <input type="checkbox"/> | riffle-pool | <input checked="" type="checkbox"/> | static | <input type="checkbox"/> |
| step-pool cascade | <input type="checkbox"/> | approximately laminar | <input type="checkbox"/> | impounded | <input type="checkbox"/> |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER 1411

SPOT CHECKS (tick one box per feature)

| | | | |
|---------------------|---------------------------------------|--|------------------------|
| Spot check 1 is at: | upstream end <input type="checkbox"/> | downstream end <input checked="" type="checkbox"/> | at site (tick one box) |
|---------------------|---------------------------------------|--|------------------------|

PHYSICAL ATTRIBUTES (tick one box per feature)

| | | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Predominant bank material (one entry only) | CL | CL | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| bank features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Predominant channel substrate (one entry only) | SP | SP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| channel features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Predominant bank material (one entry only) | CL | CL | CL | CL | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| bank features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (tick one box per feature)

| | | | | | | | | | |
|---|---|----|----|----|---|---|---|---|---|
| B = bare U = uniform S = single C = complex Refer to spot-check key | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter NO) | U | NO | NO | NO | C | C | C | C | C |
| LEFT BANK | U | B | S | S | S | S | S | S | S |
| RIGHT BANK | B | S | B | S | S | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | U | U | U | U | U | C | C | C | C |

CHANNEL VEGETATION TYPES (tick one box per feature)

| | |
|----------------------------|-------------------------------------|
| NONE (tick as appropriate) | <input checked="" type="checkbox"/> |
| Liverworts/mosses | <input type="checkbox"/> |
| Emergent herbs | <input type="checkbox"/> |
| Emergent reeds/sedges | <input type="checkbox"/> |
| Flowering-leaved | <input type="checkbox"/> |
| Free-floating | <input type="checkbox"/> |
| Amphibious | <input type="checkbox"/> |
| Submerged | <input type="checkbox"/> |
| Filamentous algae | <input type="checkbox"/> |

Use end column for overall assessment over 500m (tick E or V)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 1 of 4

ENTER SITE NUMBER 1412

Altitude (m) _____ Slope _____
Solid geology _____ Drift geology _____
Distance from source (km) _____ Mean Annual Flow category (1-10) _____
Planform category _____

Site number: 1412 River name: RIVER RANGLAND
Grid Reference: ST 559037 Mid-section grid reference if different from designated site: _____

Date: 31.1.1994 Start time: 14:30 Surveyor name: PAUL HANWILL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☒ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but sectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 2 of 4

ENTER SITE NUMBER 1412

Spot check 1 is at: upstream end ☒ downstream end ☐ or site (tick one box)

GRIP PHYSICAL ATTRIBUTES (to be assessed across channel within 5m width only)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| Predominant bank material (one entry only) | GP | EA | EA | EA | EA | EA | EA | GP | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SP | SC | SC | SC | SC | SC | NO | NO | SC | NO |
| Predominant channel substrate (one entry only) | SP | EP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | RF | RF | RF | RF | RF | RF | RF | RF | RF | RF |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant bank material (one entry only) | GP | EA | EA | EA | EA | EA | GP | EA | EA | GP |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | SC | SC | SC | SC | NO | NO | SC | NO |

RIGHT BANK (tick one box only)

Predominant bank material (one entry only) ☐ GP ☐ EA ☐ EA ☐ EA ☐ EA ☐ GP ☐ EA ☐ EA ☐ GP

- bank modification (one entry only) ☐ NO ☐ NO ☐ NO ☐ NO ☐ NO ☐ NO ☐ NO ☐ NO ☐ NO

- bank feature(s) ☐ SC ☐ SC ☐ SC ☐ SC ☐ SC ☐ NO ☐ NO ☐ SC ☐ NO

LEFT RIPARIAN ZONE (if none, enter NO)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (to be assessed over a 10m wide stretch; fill in each box with one entry only)

B = base U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| LEFT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION TYPES (tick one box only)

NONE (tick as appropriate)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (see E or I)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 3 of 4

ENTER SITE NUMBER 1412

LAND USE (within 500m of river) (tick one box only)

| | L | R | | L | R |
|-------------------------|---|---|------------------------------|---|---|
| Broadleaf/wild woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 50 Right bank None ☐ Banklength % = 100

NATURAL BANK PROFILES WITHIN 500M OF SITE (tick one box only)

| | L | R | | L | R |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/undercut | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial in-steps | | |
| | | | Poached | | |

Left bank None ☒ Banklength % = 50 Right bank None ☒ Banklength % = 100

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

| | Left | Right | | None | Present |
|--------------------------|------|-------|------------------------|------|---------|
| None | | | Shading of channel | | |
| Isolated/scattered | | | Overhanging boughs | | |
| Regularly spaced, single | | | Exposed bankside roots | | |
| Occasional clumps | | | Underwater tree roots | | |
| Semi-continuous | | | Fallen trees | | |
| Continuous | | | Woody debris | | |

ASSOCIATED FEATURES (tick one box per feature)

Number of Riffles = 10 Pools = 7 Unvegetated Point Bars = 5 Vegetated Point Bars = 0

| | None | Present | | None | Present |
|--------------------------|------|---------|-----------------------------|------|---------|
| Torrential flow (rapid) | | | Unvegetated mid-channel bar | | |
| Waterfall/cascade | | | Vegetated mid-channel bar | | |
| Laminar flow (run/glide) | | | Nature island(s) | | |
| Stille flow (slack) | | | Unvegetated side bar | | |
| Exposed bedrock | | | Vegetated side bar | | |
| Exposed boulders | | | Artificial | | |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION Page 4 of 4

ENTER SITE NUMBER 1412

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------------|------------------------------|
| Bankfull height (m) | 1.0 | Bankfull width (m) |
| Bank height if different (m) | 1.0 | Bankfull height (m) |
| Embanked height (m) | 1.0 | Bank height if different (m) |
| | Water width (m) | Embanked height (m) |
| | Water depth (m) | |

Bed material at site is: consolidated ☐ loose: silt growth compact, stable ☐
unconsolidated ☒ loose: fresh clean gravel, easily dislodged, loose ☐
unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use only method used; tick one box only)

None ☐ Number of Culverts = 1 Weir = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box only)

| | L | R | CHANNEL |
|--------------|---|---|-------------------|
| None | | | None |
| Reconnection | | | Dredging |
| Bank-moving | | | Wood-cutting |
| Enhancement | | | Enhancement works |
| | | | State |

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site or a problem)

MEASUREMENTS TAKEN (tick one box only)

Number (1-14) ☐ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, RRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2146; PAUL RAYEN 7-10-4343; ANDREW BROOKES 7-25-5713

29 April 1994 SAN RAFAEL RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER 1413

LAND USE WITHIN 500M OF RIVER (tick one box per feature)

| | | | | | |
|------------------------------|--|--|------------------------------|---|---|
| Broadleaf/deciduous woodland | | | Bog, marsh, fen | | |
| Coniferous plantations | | | Improved/semi-improved grass | E | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank: None ☐ Banklength % = 95 Right bank: None ☐ Banklength % = 20

BANK PROFILES WITHIN 500M (tick one box per feature)

| | | | | | |
|--------------------|---|---|-----------------------|--|--|
| Natural/unmodified | | | Artificial/unmodified | | |
| Vertical/undercut | ✓ | ✓ | Revetted | | |
| Vertical + toe | ✓ | ✓ | Revetted - whole bank | | |
| Steep (> 45°) | ✓ | ✓ | Revetted - top only | | |
| Groynes | | | Revetted - toe only | | |
| Camouflage | | | Artificial two-stage | | |
| | | | Pushed | | |

EMBANKMENTS (tick one box per feature)

Left bank: None ☒ Banklength % = Right bank: None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

TREES (tick one box per bank)

| | | | | | |
|--------------------------|------|-------|------------------------|---------|---|
| None | Left | Right | None | Present | B |
| Isolated/western | | | Shading of channel | | ✓ |
| Regularly spaced, single | | | Overhanging boughs | | ✓ |
| Occasional clumps | | | Exposed bankside roots | | ✓ |
| Scal continuous | | | Underwater tree roots | | ✓ |
| Continuous | | | Fallen trees | | ✓ |
| | | | Woody debris | | ✓ |

ASSOCIATED FEATURES (tick one box per feature)

Number of riffles = 6

Number of pools = 3

Unvegetated Point Bars = 1

Vegetated Point Bars = 0

Number of riffles per feature

Number of pools per feature

Number of unvegetated point bars per feature

Number of vegetated point bars per feature

Waterfall/scalade

Terraced flow (rapids)

Laminar flow (run/glide)

Stale flow (pools)

Exposed bedrock

Exposed boulders

Unvegetated mid-channel bars

Vegetated mid-channel bars

Motus island(s)

Unvegetated side bar

Vegetated side bar

Artificial

29 April 1994 SAN RAFAEL RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER 1413

CHANNEL DIMENSIONS (tick one box per feature)

| | | | | | |
|------------------------------|------|--------------------|------|------------------------------|------|
| LEFT BANK | | CHANNEL | | RIGHT BANK | |
| Bankfull height (m) | 1.30 | Bankfull width (m) | 6.20 | Bankfull height (m) | 1.30 |
| Bank height if different (m) | 1.20 | Water width (m) | 1.40 | Bank height if different (m) | 0.90 |
| Embanked height (m) | | Water depth (m) | 0.05 | Embanked height (m) | |

Bed material at site is:

consolidated ☐ chest: silt growth compact, stable

unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is:

rifle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☐ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = 0 Weirs = 3 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANIPULATION (tick one box per feature)

BANKS

None ☐ Resectioning ☐ Back-mowing ☐ Enhancement ☐

CHANNEL

None ☐ Dredging ☐ Wood-cutting ☐ Enhancement works ☐ State ☐

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

High level (fast) water, very little vegetation, very little riparian habitat.

SPECIAL FEATURES (tick one box per feature)

RIVER TYPING (tick one box per feature)

Number (1-14) ☐ None of them ☐

TESTING TACKER (tick one box per feature)

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2148; PAUL RAYEN 7-19-4341; ANDREW BROOKES 7-25-5712

29 April 1994 SAN RAFAEL RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER 1413

BACKGROUND INFORMATION (tick one box per feature)

Ahine(m)

Slope

Drift geology

Mean Annual Flow category (1-10)

Planform category

FIELD SURVEY DETAILS (tick one box per feature)

Site number: 1413 River channel: 140K Mid-section grid reference if different from designated site:

Date: 14/9/1994 Start time: 1700 Surveyor name: P. HENVILLE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box per feature)

Vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box per feature)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 SAN RAFAEL RIVER HABITAT SURVEY, 1994 VERIFICATION

ENTER SITE NUMBER 1413

TEN SPOT CHECKS (tick one box per feature)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (tick one box per feature)

Fill in each box before moving onto H and I of each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| Predominant bank material (one entry only) | EA | SA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 |
| - bank feature(s) | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 |
| - channel feature(s) | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 |
| - bank feature(s) | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 | N0 |

VEGETATION STRUCTURE (tick one box per feature)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | C | C | C | C | C | C | C | C | C |
| LEFT BANK | U | U | U | U | U | U | U | U | U | U |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | C | C | C | C | C | C | C | C | C | C |

CHANNEL VEGETATION TYPES (tick one box per feature)

NONE (tick as appropriate)

Liverworts/mosses

Emergent herbs

Emergent root/sedges

Flowering-leaved

Free-floating

Amphibious

Submerged

Filamentous algae

Use end column for overall assessment over 500m (use E or A)

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SWEEP UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (Use E for each bank length of 100m)

| | | | | | |
|-----------------------|---|---|------------------------------|---|---|
| Broadleaved woodland | L | R | Dec. marsh, fen | L | R |
| Coniferous plantation | | | Improved/reed-improved grass | | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | E | |

LINEAR EXTENT OF RIPARIAN ZONE (Use E for each bank length of 100m)

Left bank None ☐ Bank length % = 40 Right bank None ☐ Bank length % = 100

BANK PROFILES WITHIN 500m (Use E for each bank length of 100m)

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/modified | L | R |
| Vertical/undercut | | | Recessed | | |
| Vertical + toe | | | Reinforced - whole bank | | E |
| Steep (> 45°) | | | Reinforced - top only | | |
| Grads | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick one box per bank)

Left bank None ☒ Bank length % = Right bank None ☐ Bank length % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | | |
|--------------------------|------|-------|------------------------|------|---------|---|
| TREES | Left | Right | ASSOCIATED FEATURES | None | Present | E |
| None | | | Sanding of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Scrub-continuous | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | | | | |
|--------------------------|------|---------|------------------------------|------|---------|---|
| Number of riffles = | None | Present | Unvegetated point bars = | None | Present | E |
| Waterfall/cascade | | | Unvegetated mid-channel bars | | | |
| Torrential flow (rapid) | | | Vegetated mid-channel bars | | | |
| Laminar flow (run/glide) | | | Mature island(s) | | | |
| Stale flow (slack) | | | Unvegetated side bar | | | |
| Exposed bedrock | | | Vegetated side bar | | | |
| Exposed boulders | | | Artificial | | | |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SWEEP UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (Use E for each bank length of 100m)

| | | | | | |
|-----------------------|---|---|------------------------------|---|---|
| Broadleaved woodland | L | R | Dec. marsh, fen | L | R |
| Coniferous plantation | | | Improved/reed-improved grass | | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | E | |

LINEAR EXTENT OF RIPARIAN ZONE (Use E for each bank length of 100m)

Left bank None ☐ Bank length % = 40 Right bank None ☐ Bank length % = 100

BANK PROFILES WITHIN 500m (Use E for each bank length of 100m)

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/modified | L | R |
| Vertical/undercut | | | Recessed | | |
| Vertical + toe | | | Reinforced - whole bank | | E |
| Steep (> 45°) | | | Reinforced - top only | | |
| Grads | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick one box per bank)

Left bank None ☒ Bank length % = Right bank None ☐ Bank length % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | | |
|--------------------------|------|-------|------------------------|------|---------|---|
| TREES | Left | Right | ASSOCIATED FEATURES | None | Present | E |
| None | | | Sanding of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Scrub-continuous | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | | | | |
|--------------------------|------|---------|------------------------------|------|---------|---|
| Number of riffles = | None | Present | Unvegetated point bars = | None | Present | E |
| Waterfall/cascade | | | Unvegetated mid-channel bars | | | |
| Torrential flow (rapid) | | | Vegetated mid-channel bars | | | |
| Laminar flow (run/glide) | | | Mature island(s) | | | |
| Stale flow (slack) | | | Unvegetated side bar | | | |
| Exposed bedrock | | | Vegetated side bar | | | |
| Exposed boulders | | | Artificial | | | |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

Distance from source (km)

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1415 River name: Warrington No section grid reference if different from designated site

Date: 11/0/1994 Start time: 0930 Surveyor name: PAUL HANVILL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box) 13

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box) 12

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

| | |
|---|--|
| <input type="checkbox"/> vee
<input type="checkbox"/> concave/bowl
<input type="checkbox"/> stepped valley floor (terraced)
<input checked="" type="checkbox"/> symmetrical
<input type="checkbox"/> asymmetrical
<input type="checkbox"/> gorgo | <input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed
<input checked="" type="checkbox"/> no obvious modification ('semi-natural') |
|---|--|

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

| |
|---|
| <input type="checkbox"/> torrential/whitewater
<input type="checkbox"/> step-pool cascade
<input checked="" type="checkbox"/> riffle-pool
<input type="checkbox"/> approximately laminar
<input type="checkbox"/> stilted
<input type="checkbox"/> impounded |
|---|

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

SWEEP UP OVER 500m

ENTER SITE NUMBER

LAND USE WITHIN 500m OF RIVER (Use E for each bank length of 100m)

| | | | | | |
|-----------------------|---|---|------------------------------|---|---|
| Broadleaved woodland | L | R | Dec. marsh, fen | L | R |
| Coniferous plantation | | | Improved/reed-improved grass | | E |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | E | |

LINEAR EXTENT OF RIPARIAN ZONE (Use E for each bank length of 100m)

Left bank None ☐ Bank length % = 40 Right bank None ☐ Bank length % = 100

BANK PROFILES WITHIN 500m (Use E for each bank length of 100m)

| | | | | | |
|--------------------|---|---|-------------------------|---|---|
| Natural/unmodified | L | R | Artificial/modified | L | R |
| Vertical/undercut | | | Recessed | | |
| Vertical + toe | | | Reinforced - whole bank | | E |
| Steep (> 45°) | | | Reinforced - top only | | |
| Grads | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick one box per bank)

Left bank None ☒ Bank length % = Right bank None ☐ Bank length % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | | |
|--------------------------|------|-------|------------------------|------|---------|---|
| TREES | Left | Right | ASSOCIATED FEATURES | None | Present | E |
| None | | | Sanding of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Scrub-continuous | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | | | | |
|--------------------------|------|---------|------------------------------|------|---------|---|
| Number of riffles = | None | Present | Unvegetated point bars = | None | Present | E |
| Waterfall/cascade | | | Unvegetated mid-channel bars | | | |
| Torrential flow (rapid) | | | Vegetated mid-channel bars | | | |
| Laminar flow (run/glide) | | | Mature island(s) | | | |
| Stale flow (slack) | | | Unvegetated side bar | | | |
| Exposed bedrock | | | Vegetated side bar | | | |
| Exposed boulders | | | Artificial | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____
 Solid geology _____ Drift geology _____
 Distance from source (km) _____ Mean Annual Flow category (1-10) _____
 Platform category _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1446 River CHAR Mid-section grid reference if different from designated site: _____
 Grid Reference: S439994
 Date: 2nd/6/1994 Start time: 14:00 Surveyor name: N. GRIEVE
 Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____
 Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)
 Photograph: general character? No ☐ Yes ☒ (tick one box)
 Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)
 Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

vee ☐
 concave/bowl ☒
 stepped valley floor (terraced) ☐
 symmetrical ☐
 asymmetrical ☐
 gorgo ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐
 open, but bed or banks predominantly artificial (eg bar reinforced) ☐
 open, little or no obvious reinforcement, but resctioned and/or realigned ☐
 open, but predominantly artificially dug (eg. mill leat, dyke) ☐
 not artificial, but dammed ☐
 no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐
 step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SPOT CHECK 1 IS AT: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | E | A | C | E | A | E | A | C | E | A |
| - bank modification (one entry only) | N | O | N | O | N | O | N | O | N | O |
| - bank feature(s) | S | A | N | C | S | C | S | C | S | C |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | S | P | S | P | S | P | S | P | S | P |
| Predominant flow type (one entry only) | R | E | R | E | R | E | R | E | R | E |
| - channel modification(s) | N | O | N | O | N | O | N | O | N | O |
| - channel feature(s) | I | B | I | B | I | B | I | B | I | B |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | E | A | C | E | A | E | A | C | E | A |
| - bank modification (one entry only) | N | O | N | O | N | O | N | O | N | O |
| - bank feature(s) | N | O | S | C | N | O | S | C | N | O |

VEGETATION STRUCTURE (to be assessed across 10m wide zone) Fill in each box: tick one entry only

B = bars U = uniform S = simple C = complex Refer to spot-check key

| | B | U | S | C |
|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | U | S | C |
| LEFT BANK | B | U | S | S |
| RIGHT BANK | S | S | U | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | N | O | C | C |

RIVER CHANNEL VEGETATION TYPES (tick in relevant boxes; tick one entry only; tick B (2-3) % area or U (1) percent)

NONE (tick as appropriate)

| | | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|--|
| Liverworts/mosses | | | | | | | | | |
| Emergent herbs | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | |
| Floating-leaved | | | | | | | | | |
| Free-floating | | | | | | | | | |
| Amphibious | | | | | | | | | |
| Submerged | | | | | | | | | |
| Filamentous algae | | | | | | | | | |

Use end column for overall assessment over 500m (use E or I)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER: 1446

LAND USE WITHIN 500m OF RIVER (use B (2-3) % banklength or U (1) percent)

| | L | R | | L | R |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/brough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick none; but if estimate percentage banklength (if present))

Left bank None ☐ Banklength % = 0 Right bank None ☐ Banklength % = 0

BANK PROFILES WITHIN 500m (use B (2-3) % banklength or U (1) percent)

| | L | R | | L | R |
|---------------------|---|---|-------------------------|---|---|
| Natural/undisturbed | | | Artificial/modified | | |
| Vertical/steep | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Step (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick none; but if estimate percentage banklength (if present))

Left bank None ☒ Banklength % = 0 Right bank None ☐ Banklength % = 0

EXTENSION OF TREES AND ASSOCIATED FEATURES

TREES (tick one box per bank)

| | Left | Right | | Left | Right |
|--------------------------|------|-------|------------------------|------|-------|
| None | | | Shading of channel | | |
| Isolated/scattered | | | Overhanging boughs | | |
| Regularly spaced, single | | | Exposed bankside roots | | |
| Occasional clumps | | | Underwater tree roots | | |
| Semi-continuous | | | Fallen trees | | |
| Continuous | | | Woody debris | | |

ASSOCIATED FEATURES (tick one box per feature)

| | None | Present B |
|------------------------|------|-----------|
| Shading of channel | | |
| Overhanging boughs | | |
| Exposed bankside roots | | |
| Underwater tree roots | | |
| Fallen trees | | |
| Woody debris | | |

NATURAL CHANNEL FEATURES

Number of Riffles = 17 Pools = 2 Unvegetated Point Bars = 3 Vegetated Point Bars = 0

| | None | Present B |
|--------------------------|------|-----------|
| Waterfall/cascade | | |
| Torrential flow (rapid) | | |
| Laminar flow (run/slide) | | |
| Static flow (stagnant) | | |
| Exposed bankbed | | |
| Exposed bankbeds | | |

UNVEGETATED MID-CHANNEL BARS

| | None | Present B |
|------------------------------|------|-----------|
| Unvegetated mid-channel bars | | |
| Vegetated mid-channel bars | | |
| Mature island(s) | | |
| Unvegetated side bar | | |
| Vegetated side bar | | |
| Artificial | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|----------------------------------|------------------------|----------------------------------|
| Bankfull height (m) 2.0 | Bankfull width (m) 6.0 | Bankfull height (m) 2.0 |
| Bank height if different (m) 2.5 | Water width (m) 5.0 | Bank height if different (m) 2.5 |
| Embanked height (m) 1.0 | Water depth (m) 0.2 | Embanked height (m) 1.0 |

Bed material at site is: consolidated ☐ chest silt/clay growth compact, stable
 unconsolidated ☒ chest fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use only methods that really do occur; were appropriate)

None ☒ Number of Culverts = 0 Weirs = 0 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick none; but if estimate percentage banklength (if present))

| | L | R | CHANNEL |
|--------------|---|---|---------|
| None | | | |
| Resectioning | | | |
| Bank-culving | | | |
| Enhancement | | | |
| | | | |

CHOKED CHANNEL (tick one box only)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCES (underline if spot check; representative of site as a whole)

Wetland, meandering channel - high energy when in flood
 Gravelly, vegetated banks. Spot checks good. (More later)

SPECIAL FEATURES (tick one box only)

Is there a special feature? (tick one box only)

None of them ☒

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO:
 PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS
 HELPLINE NUMBERS: PETER FOX 7-11-2140; PAUL RAYEN 7-18-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **144**

LAND USE WITHIN 500m OF RIVER (tick one box per feature)

| | | | |
|------------------------------|--|------------------------------|----|
| Broadleaf/deciduous woodland | | Dec. marsh, fen | |
| Coniferous plantation | | Improved/semi-improved grass | EE |
| Moorland/heath | | Tilted land | |
| Scrub/heath pasture | | Suburban/urban development | EN |

LINEAR EXTENT OF RIPARIAN ZONE (tick one box per feature)

Left bank None ☐ Banklength % = **90** Right bank None ☐ Banklength % = **80**

BANK PROFILES WITHIN 500m OF RIVER (tick one box per feature)

| | | | |
|--------------------|----|-------------------------|----|
| Natural/unmodified | | Artificial/modified | |
| Vertical/undercut | 77 | Revetted | |
| Vertical + toe | 7 | Reinforced - whole bank | EE |
| Slope (> 45°) | 7 | Reinforced - top only | |
| Gentle | 7 | Reinforced - toe only | |
| Composite | 7 | Artificial two-stage | |
| | | Poached | |

MAN-MADE ENHANCEMENTS (tick one box per feature)

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | | | | | |
|-------------------------------|-------------------------------------|-------------------------------------|--|--------------------------|-------------------------------------|
| TREES (tick one box per bank) | Left | Right | ASSOCIATED FEATURES (tick one box per feature) | None | Present |
| None | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Occlusal clumps | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Woody debris | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | | | |
|-------------------------------|----------------------------|------------------------------|--------------------------|
| Number of riffles = 14 | Number of pools = 3 | Unvegetated Point Bars | Vegetated Point Bars |
| Waterfall/cascade | <input type="checkbox"/> | Unvegetated mid-channel bars | <input type="checkbox"/> |
| Therapeutic flow (triple) | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> |
| Laminar flow (run/slide) | <input type="checkbox"/> | Mature island(s) | <input type="checkbox"/> |
| Stale flow (stagnant) | <input type="checkbox"/> | Unvegetated side bar | <input type="checkbox"/> |
| Exposed bedrock | <input type="checkbox"/> | Vegetated side bar | <input type="checkbox"/> |
| Exposed boulders | <input type="checkbox"/> | Artificial | <input type="checkbox"/> |

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **144**

CHANNEL DIMENSIONS AND INFLUENCES (tick one box per feature)

| | | |
|------------------------------|--------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embanked height (m) | Water depth (m) | Embanked height (m) |

Bed material at site is:

consolidated ☒ chest: algal growth compact, stable

unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box per feature)

Significant tributary within 500m length? No ☒ Yes ☐ (tick one box)

NUMBER OF ARTIFICIAL FEATURES (tick one box per feature)

None ☐ Number of Culverts = **1** Weirs = **2** Bridges = **3** Outfalls = **0**

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | |
|-------------|-------------------|
| BANKS | CHANNEL |
| None | None |
| Revetting | Drudging |
| Bank-mowing | Weed-cutting |
| Enhancement | Enhancement works |

CHOKED CHANNEL (tick one box per feature)

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick one box per feature)

Giant Hogweed ☐ Himalayan Balsam ☒ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box per feature)

Very varied stretch, largely open to sky with some cover on right bank. 100% exposure to climate. However, lower bank more natural.

SPECIAL FEATURES (tick one box per feature)

Kingfisher seen

RIVER TYPE (tick one box per feature)

Number (1-14) ☐ None of them ☒

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. TEL: 01925 431148; FAX: 01925 431149; ANDREW BROOKES 1-25-5712

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **144**

BACKGROUND INFORMATION (this information is being collected separately by a different team)

Altitude (m) **54** Slope **16.00** Mean Annual Flow category (1-10) **4**

Distance from source (km) **4.3** Drift geology **N. GRIEVE**

FIELD SURVEY DETAILS (tick one box per feature)

Site number: **144** River: **BEIT** Mid-section grid reference if different from designated site: **S449943**

Date: **2.1.1994** Start time: **16.00** Surveyor name: **N. GRIEVE**

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: **no obvious modification ('semi-natural')**

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☒

PREDOMINANT VALLEY FORM (tick one box per feature)

| | |
|---|--|
| <input type="checkbox"/> vee
<input checked="" type="checkbox"/> concave/bowl
<input type="checkbox"/> stepped valley floor (terraced)
<input type="checkbox"/> symmetrical
<input type="checkbox"/> asymmetrical
<input type="checkbox"/> gorge | <input type="checkbox"/> predominantly culverted
<input type="checkbox"/> open, but bed or banks predominantly artificial (eg box reinforced)
<input type="checkbox"/> open, little or no obvious reinforcement, but resectioned and/or realigned
<input type="checkbox"/> open, but predominantly artificially dug (eg. mill leat, dyke)
<input type="checkbox"/> not artificial, but dammed for lower stream reach
<input checked="" type="checkbox"/> no obvious modification ('semi-natural') |
|---|--|

NAVIGATION (tick one box per feature)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box per feature)

| |
|--|
| <input type="checkbox"/> torrential/whitewater
<input type="checkbox"/> step-pool cascade
<input type="checkbox"/> riffle-pool
<input checked="" type="checkbox"/> approximately laminar
<input type="checkbox"/> static
<input type="checkbox"/> impounded |
|--|

29 April 1994 RIVER HABITAT SURVEY 1994 VERIFICATION

ENTER SITE NUMBER **144**

TEN SPOT CHECKS (tick one box per feature)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (tick one box per feature)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|---|---|---|---|---|---|---|---|---|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one every only) | C | C | L | B | R | R | E | A | E | A |
| - bank modification (one every only) | N | N | O | R | I | F | N | O | N | O |
| - bank feature(s) | N | O | N | O | N | O | I | S | C | S |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one every only) | S | S | I | N | C | S | A | C | O | P |
| Predominant flow type (one every only) | A | L | A | L | P | O | S | A | L | A |
| - channel modification(s) | N | O | N | O | R | I | N | O | N | O |
| - channel feature(s) | N | R | I | N | O | R | N | O | N | |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one every only) | C | C | L | B | R | R | E | A | E | A |
| - bank modification (one every only) | N | N | O | R | I | F | N | O | N | O |
| - bank feature(s) | N | O | N | O | N | O | I | S | C | S |

VEGETATION STRUCTURE (tick one box per feature)

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | C | S | S | S | S | S | S | S | S |
| LEFT BANK | B | U | B | B | U | B | U | B | U | B |
| RIGHT BANK | B | U | B | B | U | B | U | B | U | B |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | N | C | S | C | S | S | S | S |

CHANNEL VEGETATION TYPES (tick one box per feature)

NONE (tick one box per feature)

| | | | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|--|--|
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Floating-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or I)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1748

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

Site number: 1748 River No. 1748 Mid-section grid reference if different from designated site: Date 21.1.1994 Start time: 13:00 Surveyor name: P. HENRY

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? 1/2 No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☒ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☒ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool/cascade ☐ approximately laminar ☒ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1748

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | SC | SC | SC | SC | SC | SC | SC | SC |
| CHANNEL | SA | SA | SA | SA | SA | SA | SA | SA | SA | SA |
| Predominant channel substrate (one entry only) | SA | SA | SA | SA | SA | SA | SA | SA | SA | SA |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank feature(s) | SC | SC | SC | SC | SC | SC | SC | SC | SC | SC |

VEGETATION STRUCTURE (to be assessed over a 50m wide reach). Fill in each box with one entry only.

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

CHANNEL VEGETATION TYPES (tick one entry only: one B (2-33% bare) or U (uniform))

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1748

LAND USE WITHIN 500m OF RIVER (tick one box only)

| | L | R | L | R |
|-----------------------|---|---|---|---|
| Broadleaved woodland | | | | |
| Coniferous plantation | | | | |
| Moorland/heath | | | | |
| Scrub/rough pasture | | | | |
| Grassland | | | | |
| Urban/developed | | | | |

EXTENT OF RIPARIAN ZONE (tick one box only)

Left bank None ☐ Banklength % = 50% Right bank None ☐ Banklength % = 10%

BANK PROFILES WITHIN 500m (tick one box only)

| | L | R | L | R |
|-------------------------|---|---|---|---|
| Natural/unmodified | | | | |
| Vertical/handcut | | | | |
| Vertical + toe | | | | |
| Steep (> 45°) | | | | |
| Grass | | | | |
| Composite | | | | |
| Artificial/modified | | | | |
| Resectioned | | | | |
| Reinforced - whole bank | | | | |
| Reinforced - top only | | | | |
| Reinforced - toe only | | | | |
| Artificial two-stage | | | | |
| Pitched | | | | |

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | Left | Right | Left | Right |
|--------------------------|------|-------|------|-------|
| None | | | | |
| Isolated/rearward | | | | |
| Regularly spaced, single | | | | |
| Occasional clumps | | | | |
| Scal-coniferous | | | | |
| Continuous | | | | |
| Shading of channel | | | | |
| Overhanging boughs | | | | |
| Exposed bankside roots | | | | |
| Underwater tree roots | | | | |
| Fallen trees | | | | |
| Woody debris | | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | None | Present | None | Present |
|------------------------------|------|---------|------|---------|
| Number of riffles = 2 | | | | |
| Waterfall/cascade | | | | |
| Territorial flow (rapid) | | | | |
| Laminar flow (run/slide) | | | | |
| Static flow (stuck) | | | | |
| Exposed bedrock | | | | |
| Exposed boulders | | | | |
| Unvegetated mid-channel bars | | | | |
| Vegetated mid-channel bars | | | | |
| Mature island(s) | | | | |
| Unvegetated side bar | | | | |
| Vegetated side bar | | | | |
| Artificial | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1748

CHANNEL DIMENSIONS AND INFLUENCES (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|---------------------|------------------------------|
| Bank full height (m) | Bank full width (m) | Bank full height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embankment height (m) | Water depth (m) | Embankment height (m) |

Bed material of site is: consolidated ☒ chest algal growth compact, stable
unconsolidated ☐ chest fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (Use tally method, then total: tick none where appropriate)

| None | Number of | Culverts | Weirs | Bridges | Outfalls |
|------|-----------|----------|-------|---------|----------|
| | | | | | |

EVIDENCE OF RECENT MANAGEMENT (Obvious signs not hidden)

| BANKS | L | R | CHANNEL |
|--------------|---|---|-------------------|
| None | | | None |
| Resectioning | | | Dredging |
| Bank-mowing | | | Weed-cutting |
| Enhancement | | | Enhancement works |
| | | | State |

ANCHORED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick one box only)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

SPECIAL FEATURES (tick one box only)

Number (1-14) ☐ None of them ☐

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HE. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-18-4340; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1449

LAND USE WITHIN 500M OF RIVER

| | | | | | |
|------------------------------|--|--|--|--|--|
| Broadleaved woodland | | | | | |
| Coniferous plantation | | | | | |
| Moorland/heath | | | | | |
| Scrub/heath pasture | | | | | |
| Improved/semi-improved grass | | | | | |
| Tilled land | | | | | |
| Suburban/urban development | | | | | |

Left bank None ☐ Banklength % = 5% Right bank None ☐ Banklength % = 100%

NATURAL CHANNEL FEATURES

| | | | | | |
|---------------------|--|--|--|--|--|
| Vertical/horizontal | | | | | |
| Vertical + toe | | | | | |
| Step (> 15%) | | | | | |
| Groove | | | | | |
| Composite | | | | | |

Artificial/modified

| | | | | | |
|-------------------------|--|--|--|--|--|
| Resectioned | | | | | |
| Reinforced - whole bank | | | | | |
| Reinforced - top only | | | | | |
| Reinforced - toe only | | | | | |
| Artificial two-stage | | | | | |
| Peached | | | | | |

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|--|--|--|--|--|
| None | | | | | |
| Isolated/scattered | | | | | |
| Regularly spaced, single | | | | | |
| Occasional clumps | | | | | |
| Semi-continuous | | | | | |
| Continuous | | | | | |

ASSOCIATED FEATURES (Tick one box per feature)

| | | | | | |
|------------------------|--|--|--|--|--|
| Shading of channel | | | | | |
| Overhanging boughs | | | | | |
| Exposed bankside roots | | | | | |
| Underwater tree roots | | | | | |
| Fallen trees | | | | | |
| Woody debris | | | | | |

NATURAL CHANNEL FEATURES

| | | | | | |
|---------------------------|--|--|--|--|--|
| Number of riffles = 8 | | | | | |
| Waterfall/cascade | | | | | |
| Torrential flow (rapid) | | | | | |
| Laminar flow (pool/slide) | | | | | |
| Stable flow (shallow) | | | | | |
| Exposed bedrock | | | | | |
| Exposed boulders | | | | | |

Unvegetated Point Bars = Vegetated Point Bars =

Unvegetated mid-channel bars = Vegetated mid-channel bars =

Mature island(s) =

Unvegetated side bar = Vegetated side bar =

Artificial =

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1449

CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK

| | | | | |
|------------------------------|-----|--------------------|----|------------------------------|
| Bankfull height (m) | 8.5 | Bankfull width (m) | 20 | RIGHT BANK |
| Bank height if different (m) | | Water width (m) | 6 | Bank height if different (m) |
| Embanked height (m) | | Water depth (m) | 10 | Embanked height (m) |

Bed material at site is:

consolidated ☐ loose ☒ coarsest algal growth compact, stable

nonconsolidated ☒ coarsest fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurements for: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (tick one box)

None ☒ Number of Culverts = Weirs = Bridges = Outfalls =

EVIDENCE OF RECENT MANAGEMENT

BANKS

| | | | | |
|--------------|--|--|--|--|
| None | | | | |
| Resectioning | | | | |
| Bank-mowing | | | | |
| Enhancement | | | | |

CHANNEL

| | | | | |
|-------------------|--|--|--|--|
| None | | | | |
| Dredging | | | | |
| Weed-cutting | | | | |
| Enhancement works | | | | |

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

UNDESIRABLE NOISANCE, PLANT SPECIES (tick one box)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (tick one box)

Typical upper reaches of a chalk stream heavily vegetated with Ranunculus.

SPECIAL FEATURES (tick one box)

Number (1-15) ☐ None of them ☐

TIME TAKEN (tick one box)

5-10 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, HRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA1 1HS. HELPLINE NUMBERS: PETER FOX 7-21-2140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5712

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1449

BACKGROUND INFORMATION

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Solid geology Platform category Distance from source (km)

FIELD SURVEY DETAILS

Site number: 1449 River Sydling Mid-section grid reference if different from designated site: Start time: 11:40 Surveyor name: J. HAVILL

Date: 31.05.1994

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: partially ☒ entirely ☐ (tick one box)

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☒ Yes ☐ (tick one box)

Photograph of channel measurement site? No ☒ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM

| | | | | |
|---------------------------------|--|--|--|--|
| vee | | | | |
| concave/bowl | | | | |
| stepped valley floor (terraced) | | | | |
| symmetrical | | | | |
| asymmetrical | | | | |
| gorge | | | | |

PREDOMINANT CHANNEL FORM

| | |
|--|-------------------------------------|
| predominantly culverted | |
| open, but bed or banks predominantly artificial (eg box reinforced) | |
| open, little or no obvious reinforcement, but resectioned and/or realigned | |
| open, but predominantly artificially dug (eg. mill leat, dyke) | |
| not artificial, but dammed | |
| no obvious modification ('semi-natural') | <input checked="" type="checkbox"/> |

NAVIGATION

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE

| | | | | |
|-----------------------|--|--|--|--|
| torrential/whitewater | | | | |
| step-pool cascade | | | | |
| rifle-pool | | | | |
| approximately laminar | | | | |
| static | | | | |
| impounded | | | | |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1449

SPOT CHECKS (500m spot)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (tick one box)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| bank feature(s) | VS | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | GP | GP | GP | GP | GP | GP | GP | GP | GP | GP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| channel feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| bank feature(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (tick one box)

B = bare U = uniform S = sloped C = complex Refer to spot-check key

| | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT RIPARIAN ZONE (if none, enter NO) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION TYPES (tick one box)

| | | | | | | | | | | |
|----------------------------|--|--|--|--|--|--|--|--|--|--|
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent roots/bushes | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or V)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately from the field survey details)

Altitude(m) Slope Drift geology Mean Annual Flow category (1-10) Platform category

Distance from source(km)

Site number: 1470 River: BAIDE Mid-section grid reference if different from designated site:

Date: 11.11.1994 Start time: 1630 Surveyor name: P. HENVILL

Are conditions affecting survey? No ☒ Yes ☐ If yes, state:

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☐ (tick one box)

Site surveyed from: left bank ☒ right bank ☐ both banks ☐ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

☐ vee ☐ concave/bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorgo

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

☐ torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool/cascade ☐ approximately laminar ☐ impounded ☐

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide cone)

Fill in each box before moving onto it and 1 at each spot check. Use abbreviations in spot-check key

1 2 3 4 5 6 7 8 9 10

LEFT BANK

Predominant bank material (one entry only) GP CLEA GFA EA EA EA EA EA

Bank modification (one entry only) NO NO NO NO NO NO NO NO NO

Bank feature(s) EC SC SC NO SC SC NO SC SC

CHANNEL

Predominant channel substrate (one entry only) GP GP GP GP GP GP GP GP GP

Predominant flow type (one entry only) AL AL AL AL AL AL AL AL AL

Channel modification(s) NO NO NO NO NO NO NO NO NO

Channel feature(s) NO NO NO NO NO NO NO NO NO

RIGHT BANK

Predominant bank material (one entry only) EASP EA EA EA EA EA EA EA EA

Bank modification (one entry only) NO NO NO NO NO NO NO NO NO

Bank feature(s) NO NO NO EC NO SC NO SC SC PB

VEGETATION STRUCTURES (to be assessed over a 30m wide stretch. Fill in each box with one entry only)

B = bare U = uniform S = simple C = complex Refer to spot-check key

LEFT RIPARIAN ZONE (if none, enter NO) 1/2 NO 1/2 NO 1/2 NO 1/2 NO 1/2 NO 1/2 NO 1/2 NO

LEFT BANK B U U U U U U U U

RIGHT BANK U U U B S S S U S S

RIGHT RIPARIAN ZONE (if none, enter NO) S S S NO NO NO C C C C

CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only: A (2-3% area) or 2 (vertical))

NONE (tick as appropriate)

Emergent herbs ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒

Emergent reeds/sedges ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒

Floating-leaved ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Free-floating ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Amphibious ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Submerged ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒

Filamentous algae ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Use end column for overall assessment over 500m (use E or V)

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1470

LAND USE WITHIN 500m OF RIVER (tick one box per 50m stretch)

Broadleaf/mixed woodland ☒ Bog, marsh, fen ☐

Coniferous plantation ☐ Improved/semi-improved grass ☐

Moorland/heath ☐ Tilled land ☐

Scrub/rough pasture ☐ Suburban/urban development ☐

Left bank None ☐ Banklength % = 20 Right bank None ☐ Banklength % = 75

BANK PROFILES WITHIN 500m (tick one box per 50m stretch)

Natural/unmodified ☒ Artificial/modified ☐

Vertical/undercut ☒ Resectioned ☐

Vertical + toe ☒ Reinforced - whole bank ☐

Slope (>45°) ☒ Reinforced - top only ☐

Gentle ☒ Reinforced - toe only ☐

Composite ☒ Artificial two-stage ☐

Pushed ☐

Left bank None ☒ Banklength % = Right bank None ☐ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per bank)

TREES (tick one box per bank)

None ☐ Isolated/scattered ☐ Regularly spaced, single ☐ Occasional clumps ☐ Semi-continuous ☐ Continuous ☐

ASSOCIATED FEATURES (tick one box per feature)

Shading of channel ☐ Overhanging boughs ☐ Exposed bankside roots ☐ Underwater tree roots ☐ Fallen trees ☐ Woody debris ☐

NATURAL CHANNEL FEATURES (tick one box per feature)

Number of riffles = 11 Tick one box per feature

Waterfall/cascade ☐ Torrential flow (rapids) ☐ Laminar flow (run/slides) ☐ Static flow (slack) ☐ Exposed bedrock ☐ Exposed boulders ☐

Pools = 2 Unvegetated Pool Bars = 4 Vegetated Pool Bars = 0

Unvegetated mid-channel bars ☐ Vegetated mid-channel bars ☐ Mature island(s) ☐ Unvegetated side bar ☐ Vegetated side bar ☐ Artificial ☐

19 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

CHANNEL DIMENSIONS AND INFLUENCES

LEFT BANK CHANNEL RIGHT BANK

Bank full height (m) 6 Bank full width (m) 11.0 Bank full height (m) 6

Bank height if different (m) 5 Water width (m) 5.0 Bank height if different (m) 6

Embedded height (m) Water depth (m) 0.8 Embedded height (m)

Bed material at site is: consolidated ☐ chest algal growth compact, stable ☐ unconsolidated ☒ chest fresh clean gravel, easily dislodged, loose ☐ unknown ☐ inaccessible or not visible (eg turbid water) ☐

Location of measurements is: riffle ☒ run or glide ☐ other ☐ (tick one box)

Significant tributary within 500m length? No ☒ Yes ☐

NUMBER OF ARTIFICIAL FEATURES (use tally method, then total; tick none where appropriate)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 0 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (obvious signs tick positive)

BANKS L R CHANNEL

None ☒ ☒ None ☐

Resectioning ☐ ☐ Dredging ☐

Bank-moving ☐ ☐ Weed-cutting ☐

Enhancement ☐ ☐ Enhancement works ☐ Silt ☐

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☐

NOTABLE NUISANCE PLANT SPECIES (tick box(es); No need to estimate abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot checks representative of site as a whole)

Top of channel on left side continues below the open water

Active stream with several small dams

SPECIAL FEATURES (if observed, adjacent habitat of high interest, historical significance)

RIVER TYPING (Refer to photographs of river types and indicate which resembles the river)

Number (1-14) ☐ Name of them ☐

TIME TAKEN

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, KRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 1HB. HELPLINE NUMBERS: PETER FOX 7-21-3140; PAUL RAVEN 7-10-4343; ANDREW BROOKES 7-25-5113

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

44-102-2 SNEK-UP OVER 500m from 477-20

ENTER SITE NO. 111

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or F (if present)

| | L | R | | L | R |
|-----------------------|---|---|--------------------------------|---|---|
| Broadleaved woodland | | | Bog, marsh, fen | | |
| Coniferous plantation | | | Improved/terral-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

K. LINEAR EXTENT OF RIPARIAN ZONE (tick "none" has or estimate percentage banklength if present)

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

L. BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or F (if present)

| Natural/unmodified | L | R | Artificial/modified | L | R |
|--------------------|---|---|-------------------------|---|---|
| Vertical/hardcore | | | Resectioned | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Slope (> 45°) | | | Reinforced - top only | | |
| Gentle | | | Reinforced - toe only | | |
| Composite | | | Artificial toe-slope | | |
| | | | Poached | | |

M. EMBANKMENTS (tick "none" has or estimate percentage banklength if present)

Left bank None ☐ Banklength % = Right bank None ☐ Banklength % =

N. EXTENT OF TREES AND ASSOCIATED FEATURES

| TREES (tick one box per bank) | Left | Right | ASSOCIATED FEATURES (tick one box per feature) | None | Present E |
|-------------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|
| None | <input type="checkbox"/> | <input type="checkbox"/> | E ≥ 33% | | |
| Isolated/scattered | <input type="checkbox"/> | <input type="checkbox"/> | Shading of channel | <input type="checkbox"/> | <input type="checkbox"/> |
| Regularly spaced, single | <input type="checkbox"/> | <input type="checkbox"/> | Overhanging boughs | <input type="checkbox"/> | <input type="checkbox"/> |
| Overlaid clumps | <input type="checkbox"/> | <input type="checkbox"/> | Exposed bankside roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Semi-continuous | <input type="checkbox"/> | <input type="checkbox"/> | Underwater tree roots | <input type="checkbox"/> | <input type="checkbox"/> |
| Continuous | <input type="checkbox"/> | <input type="checkbox"/> | Fallen trees | <input type="checkbox"/> | <input type="checkbox"/> |
| | | | Woody debris | <input type="checkbox"/> | <input type="checkbox"/> |

O. NATURAL CHANNEL FEATURES (Record actual number of riffles, pools and point bars)

| Number of: Riffles = 2 Pools = | None | Present E | Unvegetated Point Bars = | Vegetated Point Bars = |
|--------------------------------|--------------------------|--------------------------|------------------------------|--------------------------|
| Waterfall/cascade | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated mid-channel bars | None Present E |
| Torrential flow (rapid) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated mid-channel bars | <input type="checkbox"/> |
| Lamellar flow (run/glide) | <input type="checkbox"/> | <input type="checkbox"/> | Unvegetated side bars | <input type="checkbox"/> |
| Stable flow (ditch) | <input type="checkbox"/> | <input type="checkbox"/> | Vegetated side bars | <input type="checkbox"/> |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

44-102-2 SNEK-UP OVER 500m from 477-20

ENTER SITE NO. 111

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or F (if present)

P. CHANNEL DIMENSIONS (to be measured at one site on a straight uniform section, preferably across a riffle)

| LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|---------|------------------------------|
| Bankfull height (m) | 1.0 | Bankfull height (m) |
| Bank height if different (m) | | Bank height if different (m) |
| Bankfull width (m) | 5.75 | Bankfull width (m) |
| Water width (m) | 1.1 | Water width (m) |
| Water depth (m) | 0.01 | Water depth (m) |
| Embanked height (m) | | Embanked height (m) |

Q. MATERIAL AT SITE (tick one box)

consolidated ☐ chest algal growth compact, stable

unconsolidated ☐ chest: fresh clean gravel, easily dislodged, loose

unknown ☐ inaccessible or not visible (eg turbid water)

R. LOCATION OF MEASUREMENTS (tick one box)

riffle ☒ run or glide ☐ other ☐ (tick one box)

S. EVIDENCE OF RECENT MANAGEMENT (Observe signs tick boxes)

BANKS: None ☐ Resectioning ☐ Bank-mowing ☐ Enhancement ☐

CHANNEL: None ☐ Dredging ☐ Weed-cutting ☐ Enhancement works ☐

T. CHOKED CHANNEL (Is 33% or more of the channel over 500m choked with vegetation?) NO ☐ YES ☐

U. NOTABLE NUISANCE PLANT SPECIES (tick box(es) No need to tick abundance)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

V. BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

W. SPECIAL FEATURES (eg debris adjacent habitats of high interest)

X. RIVER TYPING (Refer to photographs of river types and indicate which resembles this site)

Number (1-14) ☐ None of them ☐

Y. TIME TAKEN (Approximate) 45 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NRA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA11 8HS. HELPLINE NUMBERS: PETER FOX 01246 321146; PAUL RAVEN 01246 321143; ANDREW BROOKES 01246 321144

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

44-102-2 SNEK-UP OVER 500m from 477-20

ENTER SITE NO. 111

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or F (if present)

A. BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) Slope Drift geology Mean Annual Flow category (1-10) Planform category

B. FIELD SURVEY DETAILS (Complete all questions)

Site number: 1471 River: Fawcett

Grid Reference: 54652 843

Date: 1.1.1994 Start time: 15.00 Surveyor name: J.H. BRACKBURN

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☐ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☐

C. PREDOMINANT VALLEY FORM (tick one box only)

vee ☐ concave/bowl ☒ stepped valley floor (terraced) ☐ symmetrical ☐ asymmetrical ☐ gorge ☐

D. PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg bar reinforced) ☐ open, little or no obvious reinforcement, but resectioned and/or realigned ☒ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☐

E. NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

F. PREDOMINANT FLOW TYPE (tick one box only)

run ☒ riffle ☐ pool ☐ step-pool cascade ☐ rap ☐ waterfall ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

44-102-2 SNEK-UP OVER 500m from 477-20

ENTER SITE NO. 111

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or F (if present)

G. PHYSICAL ATTRIBUTES (to be assessed across channel within a 2m wide zone)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant channel substrate (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Predominant flow type (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel features | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

H. VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | B | U | S | C |
|---|---|---|---|---|
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S |
| LEFT BANK | S | S | S | S |
| RIGHT BANK | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S |

I. CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry only E (≥ 33% area) or F (if present))

| | None | Emergent herbs | Emergent reeds/sedges | Flowering reeds | Free-floating | Amphibious | Submerged |
|----------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| NONE (tick as appropriate) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergent herbs | | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergent reeds/sedges | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flowering reeds | | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Free-floating | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Amphibious | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Submerged | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

BACKGROUND INFORMATION (This information is being collected separately)

Altitude (m) _____ Slope _____
 Solid geology _____ Drift geology _____
 Distance from source (km) _____ Mean Annual Flow category (1-10) _____
 Platform category _____

FIELD SURVEY DETAILS (Complete all questions)

Site number: 1472 River: Tawock Mid-section grid reference if different from designated site: _____
 Grid Reference: 5756843 Date: 5 Apr 1994 Start time: 1445 Surveyor name: Mrs. H. M. RICHARDSON

Are conditions affecting survey? No ☒ Yes ☐ If yes, state: _____

Bed of river visible? No ☐ partially ☐ entirely ☒ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☐ channel ☒

PREDOMINANT VALLEY FORM (tick one box only)

☐ Vee ☐ concave bowl ☐ stepped valley floor (terraced) ☒ symmetrical ☐ asymmetrical ☐ gorge

PREDOMINANT CHANNEL FORM (tick one box only)

☐ predominantly culverted ☐ open, but bed or banks predominantly artificial (eg box reinforced) ☐ open, little or no obvious reinforcement, but resilted and/or realigned ☐ open, but predominantly artificially dug (eg mill race, dyke) ☐ not artificial, but dammed ☒ no obvious modification ('semi-natural')

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☒ static ☐ step-pool cascade ☐ approximately laminar ☐ impounded ☐

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

SPOT CHECKS (ca 50m apart)

Spot check 1 is at: upstream end ☒ downstream end ☐ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--|----|----|----|----|----|----|----|----|----|----|
| LEFT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| CHANNEL | CP | CP | CP | CP | CP | CP | CP | CP | CP | CP |
| Predominant channel substrate (one entry only) | CP | CP | CP | CP | CP | CP | CP | CP | CP | CP |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - channel features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| RIGHT BANK | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| Predominant bank material (one entry only) | EA | EA | EA | EA | EA | EA | EA | EA | EA | EA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features(s) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |

VEGETATION STRUCTURE (to be assessed over a 10m wide reach) Fill in each box with one entry only

B = bare U = uniform S = simple C = complex Refer to spot-check key

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| LEFT RIPARIAN ZONE (if none, enter NO) | C | C | S | S | C | C | C | C | C | S |
| LEFT BANK | C | C | S | S | C | C | C | C | C | S |
| RIGHT BANK | S | S | U | S | S | U | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | C | C | S | S | C | C | C | C | C | C |

CHANNEL VEGETATION TYPES (fill in appropriate boxes with one entry only) (tick one box only)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|---|---|---|---|---|---|---|---|---|----|
| NONE (tick as appropriate) | | | | | | | | | | |
| Emergent/reeds | | | | | | | | | | |
| Emergent/beds | | | | | | | | | | |
| Emergent/reeds/beds | | | | | | | | | | |
| Floating/charred | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or F)

29 April 1994 RIVER HABITAT SURVEY: 1994 VERIFICATION

ENTER SITE NUMBER 1472

LAND USE WITHIN 50m OF RIVER (tick one box per feature)

| | L | R | | L | R |
|------------------------------|---|---|------------------------------|---|---|
| Broadleaf/deciduous woodland | | | Bag, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

Left bank None ☐ Banklength % = 100 Right bank None ☐ Banklength % = 100

BANK PROFILES WITHIN 50m (tick one box per feature)

| | L | R | | L | R |
|--------------------|---|---|-----------------------|---|---|
| Natural/unmodified | | | Artificial/modified | | |
| Vertical/vertical | | | Resilted | | |
| Vertical + toe | | | Reinforced - toe bank | | |
| Step (> 45°) | | | Reinforced - top only | | |
| Grass | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Pierced | | |

Left bank None ☒ Banklength % = Right bank None ☒ Banklength % =

EXTENT OF TREES AND ASSOCIATED FEATURES (tick one box per feature)

| | Left | Right | | None | Present | E |
|--------------------------|------|-------|------------------------|------|---------|---|
| None | | | Shading of channel | | | |
| Isolated/scattered | | | Overhanging boughs | | | |
| Regularly spaced, single | | | Exposed bankside roots | | | |
| Occasional clumps | | | Underwater tree roots | | | |
| Semi-continuous | | | Fallen trees | | | |
| Continuous | | | Woody debris | | | |

NATURAL CHANNEL FEATURES (tick one box per feature)

| | None | Present | | None | Present | E |
|--------------------------|------|---------|------------------------------|------|---------|---|
| Number of Riffles = 4 | | | Unvegetated Point Bars = | | | |
| Waterfall/cascade | | | Vegetated Point Bars = | | | |
| Terraced flow (trifids) | | | Unvegetated mid-channel bars | | | |
| Laminar flow (run/slide) | | | Vegetated mid-channel bars | | | |
| Static flow (stack) | | | Mature island(s) | | | |
| Exposed bedrock | | | Unvegetated side bar | | | |
| Exposed boulders | | | Vegetated side bar | | | |
| | | | Artificial | | | |

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CHANNEL DIMENSIONS AND INFLUENCES (measure at one site on a straight uniform section, preferably across a riffle)

| | LEFT BANK | CHANNEL | RIGHT BANK |
|------------------------------|-----------|---------------------|------------|
| Bank full height (m) | 0.4 | Bank full width (m) | > 50 |
| Bank height if different (m) | 0.4 | Water width (m) | 6 |
| Embed of height (m) | | Water depth (m) | 0.3 |
| Bank height if different (m) | 0.4 | Embed of height (m) | |

Bed material at site is: consolidated ☒ chest algal growth compact, stable
 unconsolidated ☒ chest: fresh clean gravel, easily dislodged, loose
 unknown ☐ inaccessible or not visible (eg turbid water)

Location of measurement is: riffle ☐ run or glide ☒ other ☐ (tick one box)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES (Use only method, then tick one box where appropriate)

None ☐ Number of Culverts = 0 Weirs = 1 Bridges = 1 Outfalls = 0

EVIDENCE OF RECENT MANAGEMENT (tick one box per feature)

| | L | R | CHANNEL |
|-------------|---|---|-------------------|
| None | | | None |
| Resilience | | | Dredging |
| Bank-moving | | | Wood-cutting |
| Enhancement | | | Enhancement works |
| | | | State |

Is 33% or more of the channel over 500m choked with vegetation? NO ☐ YES ☒

NOTABLE NUISANCE PLANT SPECIES (tick one box per species)

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (indicate if spot checks representative of site as a whole)

SPOT CHECK

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX FOR RIVER HABITAT SURVEY, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA4 1HE. HELPLINE NUMBERS: PETER FOX 7-31-3140; PAUL RAYEN 7-10-4340; ANDREW BROOKES 7-15-5712

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SWEET-UP OVER 500m ENTER SITE NUMBER 1473

LAND USE WITHIN 50m OF RIVER Use E (≥ 33% banklength) or J (if present)

| | | | | | |
|-----------------------|--|--|------------------------------|--|--|
| Broadleaf/woodland | | | Log, marsh, fen | | |
| Coniferous plantation | | | Improved/semi-improved grass | | |
| Moorland/heath | | | Tilled land | | |
| Scrub/rough pasture | | | Suburban/urban development | | |

LINEAR EXTENT OF RIPARIAN ZONE (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☐ Banklength % = 100 Right bank: None ☐ Banklength % = 100

BANK PROFILES WITHIN 500m Use E (≥ 33% banklength) or J (if present)

| | | | | | |
|--------------------|--|--|-------------------------|--|--|
| Natural/unmodified | | | Artificial/unmodified | | |
| Vertical/undercut | | | Recessed | | |
| Vertical + toe | | | Reinforced - whole bank | | |
| Steep (> 45°) | | | Reinforced - top only | | |
| Gravels | | | Reinforced - toe only | | |
| Composite | | | Artificial two-stage | | |
| | | | Poached | | |

EMBANKMENTS (tick 'none' box or estimate percentage banklength if present)

Left bank: None ☒ Banklength % = Right bank: None ☐ Banklength % = 15

EXTENT OF TREES AND ASSOCIATED FEATURES

TREES (Tick one box per bank)

| | | | | | |
|--------------------------|--|--|--|--|--|
| None | | | Associated features (Tick one box per feature) | | |
| Isolated/scattered | | | Shading of channel | | |
| Regularly spaced, single | | | Overhanging boughs | | |
| Occasional clumps | | | Exposed bankside roots | | |
| Semi-continuous | | | Underwater tree roots | | |
| Continuous | | | Fallen trees | | |
| | | | Woody debris | | |

NATURAL CHANNEL FEATURES (Refer actual number of riffles, pools and point bars)

| | | | | |
|--|--|--|------------------------------|--|
| Number of: Riffles = 0 Pools = 0 Unvegetated Point Bars = 0 Vegetated Point Bars = 0 | | | | |
| Waterfalls/cascades | | | Unvegetated mid-channel bars | |
| Torrential flow (rapids) | | | Vegetated mid-channel bars | |
| Laminar flow (run/glide) | | | Mature island(s) | |
| Stirle flow (slack) | | | Unvegetated side bar | |
| Exposed bedrock | | | Vegetated side bar | |
| Exposed boulders | | | Artificial | |

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DIMENSIONS AND INFLUENCES

CHANNEL DIMENSIONS to be measured at one site on a straight uniform section, preferably across a riffle

| | | |
|------------------------------|--------------------|------------------------------|
| LEFT BANK | CHANNEL | RIGHT BANK |
| Bankfull height (m) | Bankfull width (m) | Bankfull height (m) |
| Bank height if different (m) | Water width (m) | Bank height if different (m) |
| Embanked height (m) | Water depth (m) | Embanked height (m) |

Dead material at site is: consolidated ☐ eluvial: algal growth compact, stable
unconsolidated ☐ eluvial: fresh clean gravel, easily dislodged, loose
unknown ☐ inaccessible or not visible (eg. turbid water)

Location of measurements is: riffle ☐ run or glide ☒ other ☐ (tick one box)

TRIBUTARIES (tick one box only)

Significant tributary within 500m length? No ☐ Yes ☒

NUMBER OF ARTIFICIAL FEATURES Use tally method, then total: tick 'none' where appropriate

None ☐ Number of Culverts = Weirs = Bridges = 2 Outfalls =

EVIDENCE OF RECENT MANAGEMENT Obvious signs tick box(es)

| | | | |
|---------------|---|---|-------------------|
| BANKS | L | R | CHANNEL |
| Recessing | | | None |
| Bank-slumping | | | Dredging |
| Enhancement | | | Weed-cutting |
| | | | Enhancement works |

CHOKED CHANNEL

Is 33% or more of the channel over 500m choked with vegetation? NO ☒ YES ☐

NOTABLE NUISANCE PLANT SPECIES tick box(es) No need to estimate abundance

Giant Hogweed ☐ Himalayan Balsam ☐ Japanese Knotweed ☐

BRIEF DESCRIPTIVE SENTENCE (Indicate if spot check representative of site as a whole)

Small flow, steep, with emergent reeds along much of bank. Some fallen trees in channel. One rock covered pile.

SPECIAL FEATURES (tick box(es) adjacent habitats of high interest, incidental sightings)

Small number of point bars, left bank. One fallen tree beyond right bank (low).

RIVER TYPING Refer to photographs of river types and indicate which resembled the site

Number (1-14) ☒ None of them ☐

TIME TAKEN 55 min

CHECK THAT THIS FORM HAS BEEN COMPLETED CORRECTLY, AND STAPLED, THEN RETURN TO: PETER FOX, NIA NORTH WEST REGION, RICHARD FAIRCLOUGH HOUSE, WARRINGTON, WA9 3HR. TELEPHONE NUMBERS: PETER FOX 7-21-2148; PAUL HAYDEN 7-10-4343; ANDREW BROOKS 7-15-5312

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BACKGROUND INFORMATION This information is being collected separately

Altitude(m) Slope Solid geology Drift geology Mean Annual Flow category (1-10) Planform category

FIELD SURVEY DETAILS: Complete all questions

Site number: 1473 River Frome Mid-section grid reference if different from Grid Reference: S4845872

Date 1.1.6.1994 Start time: 09:25 Surveyor name J. BLACKBURN R. ARMITAGE

Are conditions affecting survey? No ☒ Yes ☐ If yes, state

Bed of river visible? No ☐ partially ☒ entirely ☐ (tick one box)

Photograph: general character? No ☐ Yes ☒ (tick one box)

Photograph of channel measurement site? No ☐ Yes ☒ (tick one box)

Site surveyed from: left bank ☐ right bank ☐ both banks ☒ channel ☐

PREDOMINANT VALLEY FORM (tick one box only)

yes ☐ concave/bowl ☐ stepped valley floor (terraced) ☐ symmetrical ☒ asymmetrical ☐ gorge ☐

PREDOMINANT CHANNEL FORM (tick one box only)

predominantly culverted ☐ open, but bed or banks predominantly artificial (eg. bag reinforcement) ☐ open, little or no obvious reinforcement, but reactioned and/or realigned ☐ open, but predominantly artificially dug (eg. mill leat, dyke) ☐ not artificial, but dammed ☐ no obvious modification ('semi-natural') ☒

NAVIGATION (tick one box only)

Is there a functioning navigation? No ☒ Yes ☐ Don't know ☐

PREDOMINANT FLOW TYPE (tick one box only)

torrential/whitewater ☐ riffle-pool ☐ static ☐ step-pool cascade ☐ approximately laminar ☒ inflooded ☐

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TEN SPOT CHECKS (ca. 50m apart)

Spot check 1 is at: upstream end ☐ downstream end ☒ of site (tick one box)

PHYSICAL ATTRIBUTES (to be assessed across channel within a 1m wide zone)

Fill in each box before moving onto H and I at each spot check. Use abbreviations in spot-check key

| | | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| LEFT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | CA | CA | CA | CA | CA | CA | CA | CA | CA | CA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features | VS | VS | VS | VS | VS | VS | VS | VS | VS | VS |
| CHANNEL | | | | | | | | | | |
| Predominant channel substrate (one entry only) | UV | UV | UV | UV | UV | UV | UV | UV | UV | UV |
| Predominant flow type (one entry only) | AL | AL | AL | AL | AL | AL | AL | AL | AL | AL |
| - channel modification(s) | VS | VS | VS | VS | VS | VS | VS | VS | VS | VS |
| - channel features | VS | VS | VS | VS | VS | VS | VS | VS | VS | VS |
| RIGHT BANK | | | | | | | | | | |
| Predominant bank material (one entry only) | CA | CA | CA | CA | CA | CA | CA | CA | CA | CA |
| - bank modification (one entry only) | NO | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| - bank features | VS | VS | VS | VS | VS | VS | VS | VS | VS | VS |
| VEGETATION STRUCTURE (to be assessed just a 10m wide zone) Fill in each box with one entry only | | | | | | | | | | |
| B = bare U = uniform S = simple C = complex Refer to spot-check key | | | | | | | | | | |
| LEFT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |
| LEFT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT BANK | S | S | S | S | S | S | S | S | S | S |
| RIGHT RIPARIAN ZONE (if none, enter NO) | S | S | S | S | S | S | S | S | S | S |
| CHANNEL VEGETATION TYPES (fill in relevant boxes with one entry; use E (≥ 33% area) or J (if present)) | | | | | | | | | | |
| NONE (tick as appropriate) | | | | | | | | | | |
| Liverworts/mosses | | | | | | | | | | |
| Emergent herbs | | | | | | | | | | |
| Emergent reeds/sedges | | | | | | | | | | |
| Flowering-leaved | | | | | | | | | | |
| Free-floating | | | | | | | | | | |
| Amphibious | | | | | | | | | | |
| Submerged | | | | | | | | | | |
| Filamentous algae | | | | | | | | | | |

Use end column for overall assessment over 500m (use E or J)

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